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No. 4.—SOME ASPECTS OF VETERINARY DERMATOLOGY*

BY

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For this admirably attended session at the Music Hall, Aberdeen, on the Thursday morning the Chairman was Mr. A. J. MacLennan, B.Sc., M.R.C.V.S., of Inverness. Mr. James A. Brown, M.R.C.V.S., of Invergordon, was Recording Secretary.

The CHAIRMAN: Ladies and gentlemen, the subject of our paper this morning is "Some Aspects of Veterinary Dermatology" and the author is Mr. S. Jennings, from the University of Glasgow Veterinary School. He is an old friend of this Association. He has done a great deal of good work for it in the past and we welcome him here this morning. He is well known to you as a practitioner in England, and in fact he is a real Sassenach, but we are very pleased indeed to welcome him to Scotland and we can see he is enjoying his domicile north of the border.

His subject, veterinary dermatology, is of great interest to all those engaged in practice and I have no doubt that it will provoke a very lively discussion this morning. Mr. Lewis will have 20 minutes for opening the discussion and after that the discussion will be from the floor of the hall. I would just ask you to be as brief and terse as possible so that everybody who wishes to speak may have the opportunity for doing so.

We will proceed straight away by calling on Mr. Jennings since he would perhaps like to elaborate a little on his paper and also demonstrate some of his points by the use of lantern slides. (Applause.)

Mr. SYDNEY JENNINGS: In clinical work I think we often develop an exaggerated mental conception of how many cases of a particular type we have seen; and furthermore, atypical forms tend to loom with undue prominence in our memory. It is only when all cases are recorded that we get a true picture. You may feel that in some of the classifications I have made of skin diseases the numbers of individual cases are not large. The classification, however, was not based on these cases alone. It was based on previous observations and the recording of individual cases came later. You will appreciate, too, I know, that I had to record a large number of other skin cases at the same time and which were either in other species or did not offer any new features. By means of outlined contours of animals it was possible to make a record of the positions of lesions and in the case of the small animals a comprehensive questionnaire was completed as data were extracted from the owners.

Mr. Jennings' paper was as follows:—

* Presented to the 71st Annual General Meeting and Congress of the British Veterinary Association, at Aberdeen, on September 10th, 1953.

In the majority of papers on animal skin diseases that have been published in the past 25 years the writers appear to have given their general impressions of skin conditions as gained in the course of practice but without reference to figures based on individual records. In the present paper, therefore, an attempt has been made to confine the observations to those made on a series of carefully recorded cases. The work was carried out a few years ago, and though many skin cases had been seen prior to the present series, and from which general impressions had been gained, a special effort has been made to avoid using such unrecorded data. The British Veterinary Association made the request that the paper should be confined to skin diseases of small animals and, while this has been fulfilled, no attempt has been made to present a comprehensive survey of all skin diseases of small animals and only those facts which it is believed have not been published hitherto are included.

ECZEMA

So many attempts have been made by dermatologists to define eczema and so many conditions have been labelled as eczema that it has now virtually become a term which is used to describe any inflammation of the skin the cause or nature of which is unknown. Most users of the term, however, feel that it is associated with some antigen-cellular-antibody reaction and some workers have now come to use the term "atopic dermatitis" and "allergic dermatitis" in its place. But Cooke (1947) states that "in no important group of commonly accepted diseases of allergy is our knowledge more scanty and more superficial, and the dermatologic and allergic literature more contradicting and confusing, than in that group designated as allergic dermatitis." The term eczema, therefore, does not necessarily give any indication as to the aetiology of the skin conditions bearing this name.

ACUTE MOIST ECZEMA OF THE DOG

Whatever may be the true meaning of eczema and whatever the true cause of the condition known as acute moist eczema in the dog, at least veterinarians are speaking a common language when this label is used. The cases recorded in this section are those in which a severe lesion appeared suddenly. Some apparently normal dogs developed a lesion within 12 to 24 hours. The majority did so in less than three days. Lesions were circumscribed, hot, painful and oedematous with outpouring of serum. The hair in the area either was soaked with the serum or in some more severe cases was absent.

In the literature reference is often made to vesicles appearing within or at the edges of the lesion (Hutyra, Marek & Manninger, 1938). These were not seen in any of the 55 cases in the present series. There were 47 rough-coated dogs affected and eight smooth-coated, but no particular breed appeared more susceptible. Thirty-seven cases occurred in the months of April to September and 18 in the months October to March.

Aetiology.—Analysis of a questionnaire used for extracting data from the owners does not indicate that the

condition is associated with the following :—

Bathing the animal or allowing it to go into water.
Going near the sea or into the sea.
Receiving so-called "condition powders."
Having access to a garden.
Receiving any particular article of diet (although fish had been included in a high proportion of cases).

It has been suggested that ectoparasites may play an important part (Holmes, 1933; Pugh, 1947), and particular care was paid to this aspect. Two cases had to be discarded because of previous dressings with parasiticides, and of the 53 cases 24 were infested with fleas and 15 with *Linognathus piliferus*, thus representing 73·6 per cent. with demonstrable ectoparasites. Only 13 dogs, or 24·4 per cent., were without demonstrable ectoparasites, but some of these had commenced scratching before lesions developed and ceased to do so after a suitable parasiticide had been applied. As the odd flea is notoriously difficult to find, and as he is so often a visitor to the host at night, it may be assumed that an even higher percentage of dogs had been affected with ectoparasites, though it is unlikely to account for the whole of the 24·4 per cent. of cases.

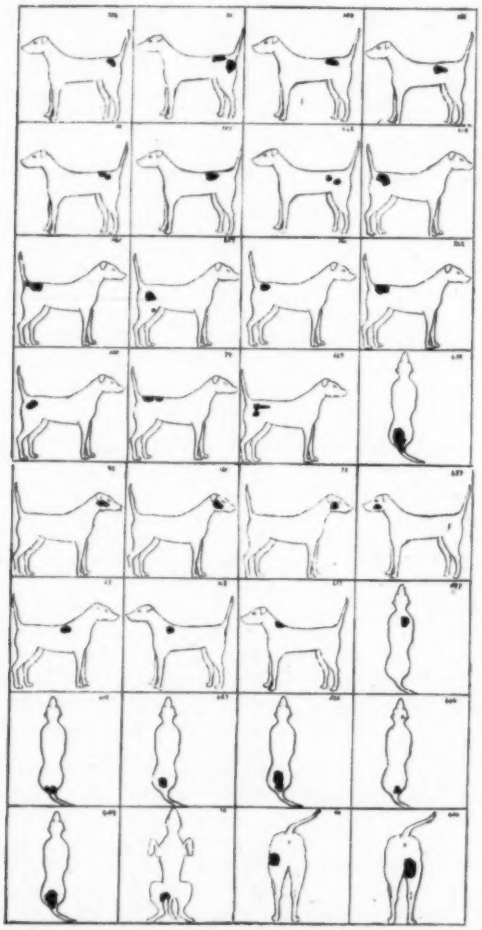

Fig. 1.—Diagrams illustrating the position of lesions in 32 consecutive and unselected cases of acute wet eczema in the dog. (Diagrams have been rearranged into groups.) The positions are typical of the whole group.

	Predilection sites			
	Back, rump, loins, root of tail	Over upper half of scapula	Over masseter muscle	Ear flap, inner aspect of thigh, etc.
Number of cases 55	35	5	5	10
Percentage cases 100	63·3%	9%	9%	18·1%

In every case the lesion was in a position that could be reached by the animal with its mouth or with its hind legs. The average age incidence was 4·7 years, but in only one case did the owner state that the animal had suffered a previous attack.

Eczema Resembling Wet Eczema but not as Acute

These cases are recorded separately because the term eczema is used for so many conditions and it is desired to keep the well-recognised cases of acute moist eczema intact.

There were 31 cases which resembled acute moist eczema in regard to distribution of lesions and in the relationship to ectoparasites. They differed because the onset of lesions took several weeks, there was an increase in the number of lesions present, they were not as acute and outpouring of exudate was slight. In the majority of cases the lesions consisted of sparsity of hair in a circumscribed area in which there were papules. These did not become pustules and vesicles were never present.

Discussion.—The facts relating to the foregoing 86 cases provide strong evidence that the lesions were self-inflicted by the dog either with the teeth or with the claws of the hind feet. There is evidence, too, that in over 73·6 per cent. of cases ectoparasites were a cause of the animal scratching and biting. It is often stated that eczema causes biting and scratching. Evidence gained in the foregoing cases, however, was that the animals showed irritation before the appearance of a lesion. An explanation is still required for the scratching in those animals on which ectoparasites could not be found.

Eczema in the Cat. "Fish Eczema"

This common scourge of cats has a clinical picture closely resembling that of eczema in the dog. Seventy-seven cases were seen in the present series. Holmes (1933) suggested that the lesions are self-inflicted and produced by the rough tongue of the cat. Records of the positions of the lesions show that almost invariably the lesions were within reach of the animal's tongue. The cat is able to bend the neck so that it can lick the skin over the spinal column just behind the scapula. By lying and then lifting one hind leg until it points directly upwards the cat can reach the whole of the posterior aspect of the thigh. The majority of lesions were in that part of the leg and on the skin at either side of the spinal column from the scapula backwards. In four cases there were also lesions on the head and in two there were lesions on the dorsal aspect of the neck. Scratching with the hind leg could have accounted for these, however.

Association with a Fish Diet.—The condition has long been called "fish eczema" because affected cats usually have an almost exclusive diet of fish. On enquiry of owners of non-affected cats, however, it is found that most cats are fed almost entirely on fish.

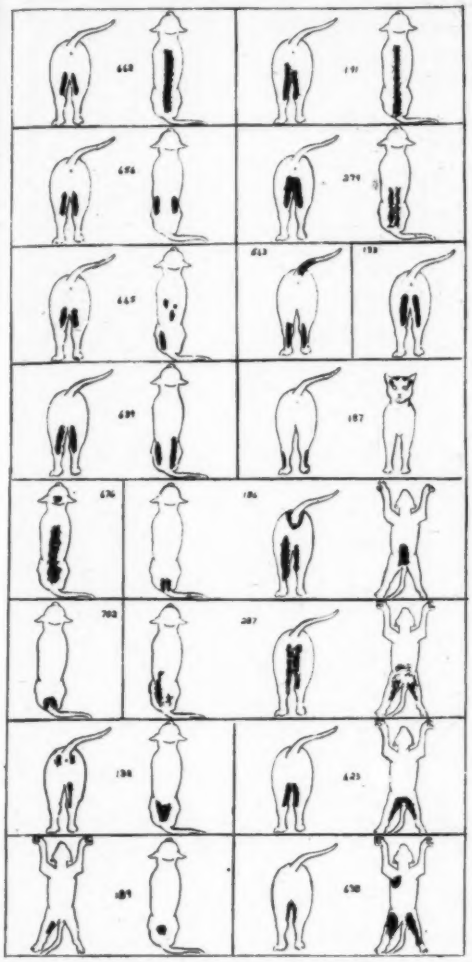

Fig. 2.—Diagrams illustrating the position of lesions in 17 consecutive and unselected cases of eczema in the cat. (Diagrams have been rearranged into groups.) The positions are typical of the whole series. The shaded areas do not represent the lesions but the areas in which the lesions occurred.

Evidence against fish as a contributory cause was as follows:—

Six affected cats received no fish whatsoever.

Six affected cats received fish only occasionally.

Affected cats were cured while receiving an entirely fish diet.

Association with Ectoparasites.—Out of 76 cases it was possible to demonstrate flea infestation in 61 instances, representing 80·2 per cent. In four cases the owner had two cats; one affected and one normal. In every instance the non-affected cat carried great numbers of fleas but the owners stated that these animals never "washed" themselves, whereas the affected cats were "washing" continually. The diet in each case consisted almost entirely of fish.

Five fleas were released into the coat of an 11-year-old cat which was known to have been free of fleas all its life, which had never had skin trouble, and which received a diet consisting entirely of fish. Within four weeks the animal developed a typical severe eczema. Two weeks after the cat had been dusted with an insecticide the coat became normal, and it remained normal. This experiment will have to be repeated before conclusions can be reached. In the meantime, however, in cats there is even stronger evidence than in the case of the dog that the lesions of eczema are self-inflicted and that fleas are the cause of the irritation.

Treatment.—The use of insecticides such as BHC dust was the only treatment advised in all the foregoing cases. The owners were encouraged to continue giving an entirely fish diet. Removal of the flea does not bring about an immediate recovery in the cat because a vicious circle has been set up and the animal continues to lick the lesions. The average case took three to five weeks to clear up. In some cases the fleas had returned to the animal in a remarkably short time and the condition continued. Where insecticides were used at regular intervals cats which had been chronic cases remained free for years.

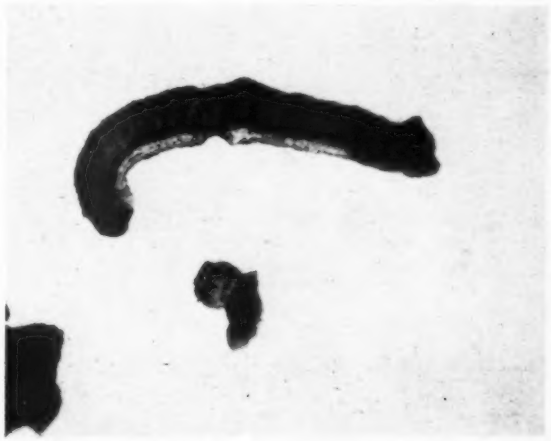

Fig. 3.—Microscopical appearance of typical flea faeces taken from the coat of a cat. It has a characteristic translucent reddish coloration.

Eczema in the Rough-Haired Fox Terrier

This is placed in a separate category because it is unlike the moist and less acute eczema described in other breeds. There were eight cases in the present series appearing in six males and two females.

The animals scratch continually in the absence of ectoparasites and the skin over the whole body is pink in colour. The skin over the lumbar and sacral vertebrae is thickened and oozes with exudate from time to time. Several cases showed a crusty exudation at the base of the nails. The condition does not appear to be associated with any particular article of diet. Unlike the previously described eczemas it does not respond to simple topical applications, does not make a spontaneous recovery and lasts the animal's lifetime.

Urticaria of Adult Dogs

In the dog urticaria usually appears in puppies and the face and eyelids swell. Five cases were seen in adult dogs, three of which showed no face swelling and two a slight swelling only. In each case, however, there had been a sudden appearance of plaques, which were 1½ to 2 inches in diameter and distributed over the body. The hair on the plaques stood on end and the animals howled when the swellings were touched. The condition lasted for periods up to 24 hours. Antihistaminics were used but it is difficult to assess the value of the treatment.

Alopecia with Pigmentation

This was found to occur in the following conditions :—

1. Associated with Sertoli cell tumours of the testicle and disappearing following orchidectomy.
2. Associated with demodectic mange.
3. Following a variety of lesions such as wet eczema, vesicular dermatitis (Jennings, 1953), ringworm and wounds.
4. As a clinical entity of unknown origin and usually called *acanthosis nigricans.*
5. In thyroid deficiency.

So-called "Acanthosis Nigricans"

Acanthosis nigricans of adult man is always associated with internal malignant neoplasia (Masson & Montgomery, 1936), and the lesions appear mostly in the axillae and under the breasts. Jennings (1950) has already pointed out that the condition most resembling *acanthosis nigricans* in macroscopical appearance and microscopically, in predilection sites, is a condition of smooth-haired dachshunds. The condition is not associated with malignant neoplasia, however, and as it is always associated with friction between the forearm and chest wall the term frictional acanthosis was suggested.

In Chow Chows there is a condition in which a hairless pigmented area develops over the lumbar region. In mild cases sparse, coarse and crinkly hair grows in the area. In more pronounced cases there is complete loss of hair. Case histories of five Chows with this condition were recorded.

Fig. 4.—Heavily pigmented areas of alopecia of unknown aetiology. Such cases do not correspond with acanthosis nigricans of human subjects.

Thyroid Alopecia

Holmes (1933) described cases of alopecia, particularly in brown-coated dogs, which responded to thyroid therapy. Two such cases in brown dogs in the present series did not respond to thyroid treatment. It is difficult to make a diagnosis of thyroid deficiency in life unless the diagnosis is assumed on the grounds that an animal recovered after administration of thyroid.

Fig. 5.—Dermatitis appearing under the tail of dogs and usually seen in brown-coated animals.

Pediculosis

Out of 63 cases of lice infestation in the dog 52 were *L. piliferus* and 11 *Trichodectes canis*. In nine cases where *T. canis* was the ectoparasite a characteristic feature appeared in the flexure aspect of the humero-radial joint. This consisted of a reddish staining of the hair and an erythematous condition of the underlying skin. The lesion was due to constant nibbling with the animal's incisor teeth. The cat louse, *T. subrostratus*, was seen on only three occasions on cats.

Demodectic Mange in the Dog

In 135 cases the average age of the dogs when advice was first sought was 10·1 months. As, however, the animals had nearly always been showing lesions for some weeks or months before this, the average age of onset was somewhat lower. Only four animals had developed the disease when over two years of age. These were three

Fig. 6.—Skin lesions of the flexure aspect of humero-radial joint and associated with the louse *T. canis*.

Fig. 7.—*T. subrostratus* of cats.

years, three and a half years, four years and five years respectively.

It is often suggested that spontaneous recovery commonly occurs. Five dogs were left without any treatment.

	Age of onset	Recovery time	Animal seen again and no recurrence
Case 1 ...	4 months	9 months	4 months later
„ 2 ...	12 „	3 weeks	12 „ „
„ 3 ...	12 „	1 month	12 „ „
„ 4 ...	4½ „	5 weeks	11 „ „
„ 5 ...	12 „	No recovery in 3 years	

These figures confirm the general impression that some animals make a spontaneous recovery while others do not. The age of onset suggests that, like other parasitic conditions, demodectic mange is, for the most part, a disease of the young. Until the average age of greater numbers of spontaneously recovered animals is known, however, this cannot be demonstrated.

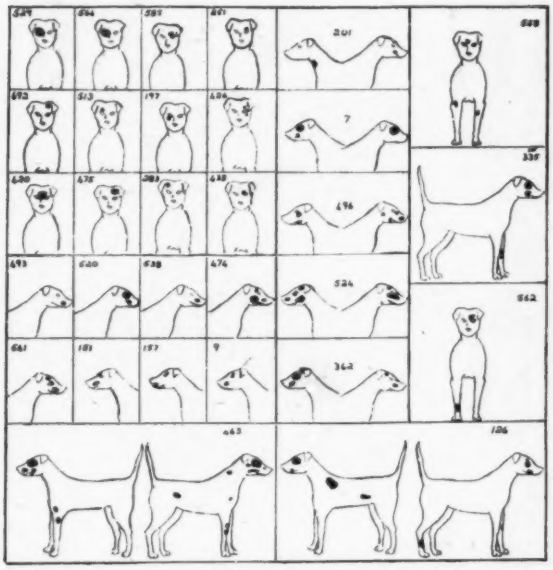

Fig. 8.—Diagrams illustrating the early and only lesions visible on 30 dogs selected from 135 cases.

Fig. 9.—Typical early lesions of demodectic mange in young dogs.

Incidence in Rough- and Smooth-Coated Dogs.—It is a popular belief that the disease is more common in smooth-coated dogs. Of 138 cases of demodectic mange:

72, or 52·1 per cent. occurred in rough-coated dogs.
66, or 47·9 per cent. occurred in smooth-coated dogs.

Rough-coated dogs were therefore affected more commonly than smooth-coated dogs.

Treatment.—McIntyre (1947) suggested that tar dermament (Parke, Davis & Co.) was a useful therapeutic agent for the disease. The preparation is a solution

representing 6 per cent. washed crude coal tar. It was used in 48 cases. Hair was clipped from around the lesion and the area painted with the lotion daily for two weeks. Treatment was then suspended for one week and continued if necessary. It was possible to follow up 29 cases, of which 25, representing 86·5 per cent., recovered

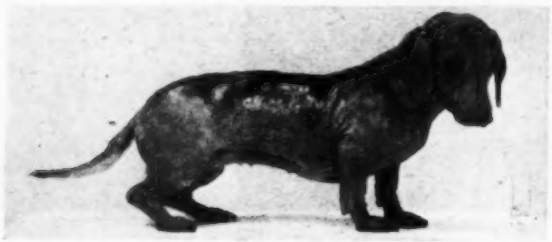

Fig. 10.—Extensive lesions of demodectic mange.

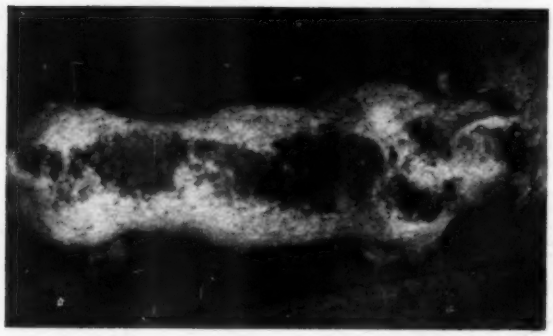

Fig. 11.—Pustular lesions of demodectic mange and easily mistaken for wet eczema.

in periods mostly between three to four weeks, and four animals only required treatment at intervals over three months. Most of the dogs were seen 9 to 24 months later and there had been no recurrence. Of the four cases which did not respond, two were extensive pustular types and in the other two cases lesions increased rapidly. Tar dermament is not suitable for application to large areas of the body, particularly where the lesions are pustular. In a smaller number of cases liquor picis carbonis B.P.C., used undiluted, gave similar results.

Sarcoptic Mange

The true lesion of sarcoptic mange is not a crust or scab, as these form only as a result of inflammation. The primary lesion is a papule, and this is true for all species, including man. In the dog these papules are best sought over the posterior part of the sternum and it is nearly always necessary to clip away the hair closely before they are seen. This procedure is well worth while in any suspected case. Scrapings for mites and eggs from this position are more easily examined as there is less debris than there is in scrapings from other positions. As the papule heals it leaves a minute scab on the skin. This can be pushed off with a needle point with the slightest pressure. The underlying epidermis appears normal and the scab has a scale of epidermis attached to it. In a moderately early case of sarcoptic mange the old lesions will be found on the abdomen and hind legs and the

Fig. 12.—Squamous demodectic mange affecting rough-haired dog.

papules on the sternum. The secret of demonstrating mites is not deep scraping but rather the selection of papules. Time devoted to clipping the hair carefully from over them will be well spent for it will save much time later when the slide is examined.

Ulceration of Ear Tips in the Dog

In six cases of ulceration of ear tips in dogs, four of which were Black Labradors, otodectic mites were recovered in each instance. In these cases, and in most other cases of otodectic otitis in the dog, the mites were few in number and careful search was required to demonstrate them. This is different from otodectic otitis in the cat where as a rule parasites are present in large numbers and are readily demonstrated. Again in the dog a few mites can cause great irritation, while the cat may harbour many hundreds and yet show relatively little irritation. Nevertheless, haematoma of the ear in the cat is nearly always associated with *otodectes*. In the dog the presence of *otodectes* in the ear provokes the formation of a small amount of a characteristic reddish moist ceruminous wax. In the cat there are large amounts of dry, crumbly, whitish debris. If the inside of the ear is touched in an affected cat the animal twists its head round and involuntarily scratches with the hind leg on the

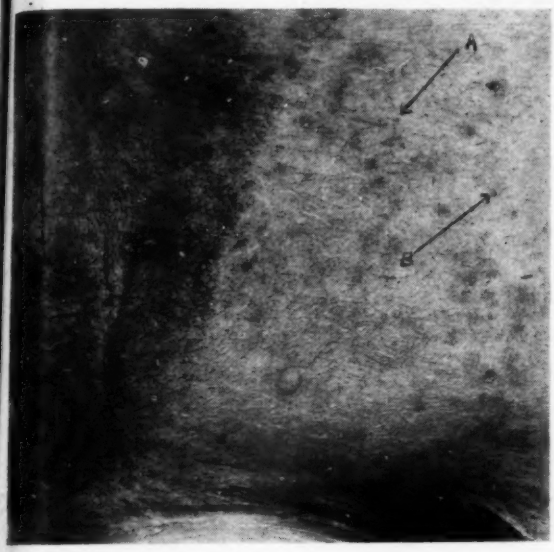

Fig. 13.—True lesions of sarcoptic mange on skin over sternum and lower part of thorax. (Hair has been clipped away.) A. Early papule. B. Healing papule with minute scab which readily comes away when touched. C. General inflammatory reaction from which it is difficult to recover mites.

Fig. 14.—Necrosis of ear tips associated with presence of *Otodectes* in meatus.

same side of the body. This is most characteristic of otodectic otitis and not of any other type of otitis. The same type of reaction occurs to a less extent in the dog.

In the dog, where the mites are so few in number, a convenient method of demonstrating them is to use a tiny blunt-edged surgical spoon or curette. The instrument is passed into the meatus, where the mites are more readily found, and the edges are gently scraped. When the spoon is examined with the naked eye some mites may be seen moving. They are recognised better, however, with the aid of a powerful hand lens or, if this is not available, by the eye piece of a microscope. The eye piece is removed, reversed and the smaller lens is placed within $\frac{1}{2}$ to 1 cm. from the object to be viewed. Mites may now be seen walking on the curette. If the examination is negative the curette should be put in a warm place, such as under a microscope lamp, so that the mites, stimulated by the heat, may have time to emerge from the wax.

In 16 cases of otodectic otitis in dogs the owners also had cats which were heavily infested with *otodectes*. That in itself is not surprising since *otodectes* are found so commonly in cats. A matter of greater significance, however, was the fact that head shaking commenced in nine dogs in periods between 3 to 12 weeks following the introduction of a kitten into the same house and *otodectes* were recovered from all the dogs and the kittens. It is possible, therefore, that most dogs become infected from cats, in which the disease is so much more common. Thus it is important that where a dog is being treated any cat in the same household should also be treated.

Trombicula autumnalis Infestation in Dogs

Five cases of dogs harbouring *T. autumnalis* mites were seen in the Lothians and all occurred between August 25th and September 7th. In each case the dog had been taken on to golf links or rough ground near the sea or had access to a garden where there were soft fruit trees. The mites were found in clusters in the fossae at the upper limit of the dorsal surfaces of the interdigital spaces as so excellently described by Steward (1943). In one case the mites could be seen with the naked eye as they moved on the dog's face. Around the same period of the year a number of other dogs were seen to be scratching after they had been in a similar environment, but it was not possible to recover mites from them.

Summary

The paper is based on a series of recorded case histories of skin conditions in small animals. A special attempt has been made to avoid "general impressions" and to confine the observations to those recorded. The unsatisfactory position regarding the use of the terms eczema and allergic dermatitis is discussed. In 55 cases of so-called moist eczema in the dog it was found that lesions were always in positions which could be reached with the animal's teeth or claws of the hind limb; the condition appeared mostly in summer months; the average age was 4·7 years; only one dog had had a previous attack and 73·6 per cent. of dogs harboured ectoparasites. In 31 cases of a similar but less acute eczema the positions of lesions and relationship to ectoparasites was much the same.

The relationship between eczema in the cat and a fish diet is discussed. There is strong evidence to suggest that it is not associated with a fish diet. Positions of

lesions were always within reach of the rough tongue or the claws and 80·2 per cent. of cats harboured ectoparasites.

An eczema quite different from so-called moist eczema appeared in rough-haired Terriers. An urticaria with raised plaques on the body was seen in five dogs.

The causes of alopecia with pigmentation are discussed. Chows appear to have an alopecia which is peculiar to the breed.

The louse *L. piliferus* appeared in 63 dogs and *T. canis* in 11 dogs. A lesion in the flexure aspect of the humero-radial joint appeared in nine dogs harbouring *T. canis*.

Of five untreated cases of demodectic mange four made a spontaneous recovery in periods ranging between three weeks and nine months. One did not recover during three years. The disease appeared in 52·1 per cent. of rough-coated dogs and 47·9 per cent. of smooth-coated dogs. The age incidence when the disease first appeared was 10·1 months. While being treated with a skin application of tar dermament (Parke, Davis & Co.) 25 dogs out of 29 recovered.

The true lesion of sarcoptic mange in dogs is described.

In five cases of ulceration of the ear tips in dogs otodectic mites were found in the ears in each case. In nine cases of otodectic otitis in dogs, head shaking commenced 3 to 12 weeks following the introduction of kittens which were harbouring otodectic mites in the ear.

Acknowledgment.—The writer is indebted to Mr. R. S. Hood, technician at the Royal (Dick) School of Veterinary Studies in the University of Edinburgh, for the care in making the photographs and to Mr. A. Finnie, technician at the Glasgow Veterinary School, for reproducing the diagrams.

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. . . . .

Mr. Jennings showed a number of slides illustrating the points he had made in the paper and said: While there is a good deal of evidence to show that eczema in both dogs and cats is associated with the presence of ectoparasites, and although the position of the lesions shows that the teeth or claws are responsible for the visible raw lesions, it is not being suggested that the story is a simple one. It is not suggested that the presence of the parasite gives simple mechanical irritation sufficient to cause the animal to scratch or bite away the skin. It is much more probable that the host is, or becomes, sensitive to the bite of the parasite and it is that sensitivity which causes excessive biting and scratching.

The presence of flea faeces in the coats of cats was accepted as evidence that fleas had been present. When examined microscopically using a 2/3rd objective flea faeces are seen to be in the form of typical stools which are cylindrical masses, slightly curved and having the bright red colour of blood.

The term acanthosis nigricans is used loosely in veterinary literature for conditions which are basically quite different from the condition in man. There appears no justification for the use of this term in veterinary literature. The predilection site of the early lesions of demodectic mange in dogs is the face, particularly around the eyes and at the commissures of the lips. Any hairless area on the face of a young dog should be regarded with suspicion.

In sarcoptic mange the typical papules appear so consistently under the hair over the posterior part of the sternum and pectoral muscles that it is recommended that in any suspicious case the hair should be clipped away closely in order to reveal these papules.

DISCUSSION

The Chairman: We must thank Mr. Jennings for the very competent way in which he has illustrated his paper by means of these lantern slides. I should also like to congratulate him on the excellence of some of the slides. Most of us who have seen these conditions will agree that we have had a very true representation of them on the screen to-day. (Hear, hear.)

It now gives me very great pleasure indeed to introduce to you Mr. Lewis. I have been privileged to meet him on several occasions and although he is perhaps not so very well known personally to all of us in the north of Scotland, I am sure we shall get a very interesting opening on this paper and we await his remarks with interest. (Applause.)

Mr. E. F. Lewis (Royal Veterinary College, Streatley): It is the privilege of the person opening the discussion on a paper to be among the first to compliment the speaker on his excellent efforts. I am sure I speak for everyone present when I congratulate Mr. Jennings for his courage in selecting the difficult field of dermatology as a subject for his paper and for the opportunity he has given us for discussion on a series of problems which must have caused a good deal of worry to clinicians and others. It is also pleasing to see that Mr. Jennings has based his observations upon comprehensive records of clinical disease, a fact which underlines the great loss of vital information which must be occurring through failure of the scientifically thinking practitioner to note, even in an abridged form, his experiences in general practice.

The word "eczema," as Mr. Jennings has indicated, conjures up a host of clinical pictures associated with an endless variety of controversial causes, each of which is blamed for the inevitable inflammatory skin reaction which follows its initial influence upon the patient. When we attempt to analyse the problem, we realise with regret the paucity of veterinary knowledge concerning the physiology and pathology of the skin. I have always felt that the conventional classification of skin diseases by means of their clinical appearance leads to confusion as far as the aetiological factors are concerned. The variety, in all details, of the host-parasite relationship is surely the important factor in the determination of the nature and severity of lesions produced. Research into this field, I believe, will be more likely to provide enlightenment than the search after specific causes which in the end may turn out to be secondary or tertiary factors. The prime cause of eczema, for example, may be mechanical or traumatic irritation by ectoparasites or other agents, intrinsic and extrinsic, reaching the skin, or a deeper skin allergy mechanism as indicated by Mr. Jennings. The reflex scratching, rubbing or biting thus induced abrades the skin and facilitates the entry and propagation of secondary infections which may be present normally on the skin's surface or again, a complex set of affairs may apply. The nature of the lesion produced, and the subsequent classification of the disease, will depend largely on the balance between the skin's resistance and the virulence of the invader. This may all appear elementary but I am glad Mr. Jennings agrees that emphasis should be placed on this aspect.

Like Mr. Jennings I have never been happy with the explanation of an intensive fish diet as a causative factor in so-called "fish eczema" of cats. I feel that, in the main, the condition resembles canine eczema, or for that matter, the same condition in any animal, any differences being due to species variations in skin anatomy and physiology. In a few cases recently, how-

er, I have experienced quite spectacular responses to the use vitamin B_{12} injections. Whether or not this product merely proves general metabolism, thus facilitating the conquering infection, I do not know but I should be grateful for Mr. nnings' opinion on the efficacy of this preparation.

Most of the cases of urticaria I have met showed involvement the face, particularly the lips and the commissures of the outh, as a fairly constant feature. I have thought that on casions the use of antihistaminic drugs has prevented extension this and allied conditions but I, too, have found it impossible to ess the value of these drugs as curative agents.

I was surprised to find that demodectic mange, in Mr. Jennings' perience, was more common in rough-coated dogs. Certainly far as the squamous form is concerned I have met the disease ore often in smooth-coated animals. The pustular form I admit seeing in both types. I confess, however, that I have not ept careful records and my remark is purely an impression but wonder whether Mr. Jennings would care to elaborate his scription of his clinical findings. It would also be interesting know whether anyone has had experience of the use of phenaidine in the treatment of demodicosis in the dog. I have ever used this preparation but I have heard reports that response its application is satisfactory.

I am glad Mr. Jennings has mentioned the method of diagnosis mite infestation by means of a hand lens. Too often I find hat students regard these parasites as purely microscopic structures and neglect to examine suspicious lesions with a lens before esorting to the microscope for identification purposes. Such an examination would, at the very least, enable the clinician to elect the most suitable material for subsequent microscopical examination.

Emphasis has been placed recently by the medical profession on the increased incidence of dermatomycosis in human beings which, it is suggested, has resulted from an increased incidence of fungus skin disease in household pets. Living and working, as I do, in country districts I have not had the opportunity of noting any marked increase in ringworm and similar conditions. I should be interested to hear whether Mr. Jennings or any other person present can confirm that there has been in recent years a decided increase in the incidence of this type of disease. (In parenthesis may I beg information on the satisfactory treatment of ringworm in cats.) I hope Mr. Jennings will forgive me for raising the question of fungus disease since it extends the discussion beyond the limits he had planned in his paper, but I feel that current interest warrants a brief excursion into the subject.

Mention of mycotic infection calls to mind the difficulties involved in the confirmation of these obstinate diseases. With the large spore types direct microscopical examination of suitable material as a rule soon confirms a diagnosis which is based on a fairly typical clinical picture, but with the high proportion of microsporosis which occurs in ringworm of household pets, aids beyond the microscope are required if effective examinations are to be made. I wonder whether Mr. Jennings would say that an ultra-violet lamp fitted with a Wood's glass filter was an indispensable piece of equipment in a small-animal practice.

It remains for me, Mr. Chairman, only to renew my congratulations to Mr. Jennings for his paper and to say how much I look forward to his remarks and to the discussion which I know he will be successful in stimulating.

The CHAIRMAN thanked Mr. Lewis for his remarks and for giving them a lead in the discussion, and the meeting was then thrown open for general discussion.

General Discussion

Mr. F. CHAMBERS (Wolverhampton): It was with very great pleasure that he immediately added his thanks for the very excellent paper. Although he had no wish to introduce a discordant note to the proceedings in Aberdeen, because it was the one place they all loved, he nevertheless had a bone to pick with the Provisional Committee inasmuch as there was only one paper in the programme which was of practical importance for practitioners, who constituted 90 per cent. of the Association. Also, with the exception of Dr. Spreull's most able film, which was thoroughly enjoyable, not a single paper was being given by a practitioner. Surely in the north of Scotland there were many able men who could have been induced to come forward.

Although the writer of the paper now under discussion was a teacher, he was at one time a practitioner, and a most successful one. (Applause.)

Another grievance was that throughout the whole of the Congress not one word was to be said about the poor old horse. Mention of it had come from Australia in relation to dermatitis of the horse, but it was not necessary to go as far as Australia to find a condition known as summer itch which was a peculiar type of dermatitis due to the bite of some insect.

The paper might be described as " the itchy dog paper." He himself had got two dogs and they both itched, although it could be guaranteed that they had no parasites on them. After every sort of treatment—injections of arsenic, internal administrations of vitamins and external applications of every kind—they still continued to itch, and his wife threatened to send them to an animal welfare society to be treated! If Mr. Jennings could say how these dogs could be stopped from scratching—bearing in mind they had no ectoparasites—he would do a great service in restoring matrimonial bliss!

Mr. G. C. BRANDER (Berkhamsted): The allergic reaction produced by the bite of a parasite, and the subsequent effect on the general condition of the animal was very interesting. He had had a practical demonstration of the unpleasantness of the bite of a parasite. In rearing human lice, which unfortunately would not live on rabbits, he and his colleagues had found it necessary to strap them on to their own legs in order to provide a feed of blood. Feeding was done for an hour and a half twice a day. At first, nothing seemed to happen. Later, little pinpricks were felt on the leg, and finally the leg became scarred. Even after the parasites had been removed, for about a fortnight the leg was excruciatingly itchy and one refrained from scratching only because it would produce a very nasty sore.

It was important to realise how troublesome lice and other parasites could be to an animal. The trouble was not the actual presence of the parasites, but the intense itchiness which was caused and the fact that an animal simply could not resist scratching.

During a recent visit to Nigeria, a thing which had struck him was that when ticks were not controlled on an animal, the body developed a form of dermatitis, which subsequently on occasion allowed a ringworm infection or bacterial infections to develop. The important thing for an itching animal was to make sure that the parasites were removed and, secondly, to remember that even though they were removed there would possibly be a following period of a fortnight or three weeks of intense irritation.

Very often people treated animals against fleas, and thought they had completed the job, but forgot that fleas could breed off the animal and that the place where they were probably propagating was in the kennel or in the bedding. Each time the animal went back to its bed it provided the conditions for the fleas to go on developing.

Mr. B. R. JONES (Birmingham): It would be very interesting to know if Mr. Jennings or any English member of the Association subscribed in any way to the fungus theory of skin irritation in dogs. Certain Americans had claimed that skin irritation where ectoparasites were not present was often a result of a minor infection of a fungus which was present in normal grassland, particularly near lakes and rivers. The treatment used was usually a form of drug known as 2-mercaptobenzothiazole which did seem to have a certain satisfactory result. There was, however, a large amount of discussion in America on the question of fungus skin irritation and there were many people who did not claim that that was so. It was very interesting to note the many fungicidal preparations put on the market in the United States for the small-animal practitioner, which were in constant use.

Mr. R. N. PHILLIPS (Ipswich): Did Mr. Jennings' case records show any greater tendency for yellow coloured dogs—yellow Labradors, golden cockers or golden retrievers—to produce wet eczema as compared with dogs of other colours? The paper indicated that 24 per cent. of wet eczema cases did not show the odd flea or any other cause.

The first slide on baldness in cats showed that the hindquarters were affected. Did case records show any connection with this and the deficiency disease in castrated male cats?

He had hoped that something would be said about " riff " in greyhounds and in what percentage of cases one could diagnose mange positively.

Mr. H. M. WILSON (Cupar): Mr. Jennings and Mr. Brander were to be congratulated on their most valuable contributions.

In cases of what might be called "The Scratching Pekinese" most careful and complete clinical examinations had failed to reveal any cause whatever.

Within the last few months he had experienced a most interesting case of ringworm in cats. A client had bought a small blue Persian kitten about six months old for a very high figure. Shortly afterwards she had on the neck—where the kitten was sometimes placed and had scratched—a lesion of ringworm, confirmed by a skin specialist. Two of her children also developed ringworm. The specialist maintained that probably the cat was the source of origin of the infection. A most exhaustive examination of the kitten was made and no lesion was found; successive Chloroform Patch Tests were negative, likewise material sent for laboratory examination was negative.

The kitten stayed with Mr. Wilson for some time and then one day, on looking at his two dogs he noticed in the vicinity of their mouths a skin lesion which rather resembled ringworm. As far as he knew the dogs had never been near the kitten, but a day or two later it was discovered that the handyman was allowing the kitten to play with the dogs. Specimens from the two dogs were forwarded to a laboratory and a positive report of ringworm was given. The skin specialist apparently had been correct in assuming that the ringworm in the human patient was from the kitten.

The two dogs made a quick response to the use of a preparation effective in cattle ringworm cases.

Reference had been made to the incidence of skin conditions in horses. In the summer time he was familiar with a skin condition in horses which was accompanied by a skin proliferation mainly about the neck. It was not always associated with any parasitism, but it caused the animal to rub a great deal and that aggravated the condition. Had Mr. Jennings any remarks to make on that?

He experienced a larger incidence of skin conditions in dogs in the summer which were covered by the word "eczema," and many were not parasitic in origin. Incidentally, were ectoparasites more active in the summer than in the winter?

Mr. C. B. Hart (Berkhamsted) hoped he might be forgiven for trespassing on to the subject of large-animal skin diseases, but as Mr. Jennings had briefly referred to the pig he felt justified in doing so.

In investigating outbreaks of skin disease in the pig he had had difficulty on occasions in reconciling the clinical picture presented with his ideas of typical sarcoptic mange in the pig.

In sarcoptic mange one expected to find an early lesion somewhere on the body consisting of a raised papule which later developed a scab or crust and by coalescence of numbers of these lesions the stage was reached whereby the pig was severely affected with thick crusts. In the absence of treatment one expected to find sarcoptic mange mites easily and often in large numbers.

In the outbreaks which were causing him concern, however, the pigs showed crusty lesions primarily on the lower parts of the legs, on the tail and less markedly on the back and other parts of the body. There was little evidence of the early lesion of sarcoptic mange and examination of skin scrapings failed to reveal the presence of *Sarcoptes scabiei*. Scratching and rubbing occurred but was not very marked.

At first thought this state of affairs suggested an infection which was inactive—either because of the pig's natural resistance coming into play, perhaps with favourable conditions of feeding to assist, or because treatment had been applied with partial success, followed by recurrence or reinfestation. Negative skin scrapings did not necessarily mean that sarcoptic mange was absent, but as the lesions persisted one was led to wonder whether in those outbreaks something other than sarcoptic mange was involved.

In one outbreak a fungus of the Candida group was isolated from skin scrapings and he would like to ask Mr. Jennings' opinion as to whether such an organism could be of pathological significance.

Miss O. Uvarov (Cobham) congratulated Mr. Jennings on his difficult task of undertaking to produce such a paper. It was very evident why he had been wise to include only "some aspects" of the problem.

With all our recent advances the problems of dermatology were somewhat neglected. The aetiology of eczema had, up to now, been only vaguely classified—descriptive terms having been applied such as:—

(*a*) summer eczema (*b*) winter eczema (*c*) seaside eczema (*d*) kennel eczema (*e*) stripping eczema or clipper's rash	Seasonal, geographical, descriptive and vague!

She would like to ask the speaker's opinion on the continual effect of clipping or stripping on dogs' skins, and if it was essential to strip terriers, or even spaniels (which was entirely wrong), then how was it that such breeds as chows, sheepdogs, golden retrievers, were able to survive the discomforts of a few spells of hot weather?

In the "moist eczema" group, she would like to know if Mr. Jennings had seen any post-operative lesions, resembling eczema, after ovaro-hysterectomy operations. For such cases had been seen in her practice.

The lesions encountered in such cases were bi-lateral, either starting from the top of the scapula and extending downwards, or they were over the chest wall—in the region of the last four and five ribs. They were about 2 to 3 inches wide by 6 to 7 inches long, and mostly appeared within 24 to 48 hours after the operation. The breed incidence was two terriers, one elkhound, one golden retriever.

In the group of eczema in terriers, and using diagnosis via deduction of rate of recovery, she had always suspected these cases to be due to deficiency of calcium, as they responded to injection of calcium.

Without going too deeply into other diseases, some dermatological symptoms could be due to the presence of other diseases, *e.g.*, nephritis, infected tonsils or fossa: some cases of suspected diabetes or rather cases of glycosuria. This of course was a group of its own, which Mr. Jennings had wisely left alone. One condition which might be of interest, and might explain the previous speaker's query on the "scratching dog," was a syndrome of hyperaemia with no other lesions. This might be associated with increased acidity of the urine—where the reaction to litmus was recorded as a very spontaneous "acid" +++; in the majority of cases, the administration of an alkaline substance was sufficient to reduce the irritation of the skin. Administration of the alkali was controlled and checked by urine analysis.

Fish eczema—in cats. Had Mr. Jennings carried out bacteriological investigations of cats' skins in such cases? An opinion had been expressed that these were *primary* staphylococcal dermatoses.

Parasitic diseases

(1) Ringworm.—Her impression was that the incidence of this was on the decline, judging by the number of cases seen at a welfare clinic, by comparison with pre-war days.

(2) Had Mr. Jennings any ideas on the interchange of sarcoptes between animals? Some years ago two cases had been seen which clinically resembled ringworm, but microscopical examination proved it to be an equine sarcopt (*Sarcoptes scabiei*). Hutyra & Marek stated that the dog could be infected by the sarcopt of the cat, pig, sheep, fox and man, but *not* by that of a horse.

On the slides of eczema cases shown, it appeared that some of these could be due to irritation of impacted anal glands. Some clinicians had advocated either removing anal glands or blocking them by a sclerosing agent; apparently such a procedure reduced the incidence of eczema around the anal region.

She agreed with Mr. Jennings that thyroid therapy should be further investigated, and in this connection would like to know if he considered chows as hypothyroid. A good number of this breed did develop a pigmented type of "eczema" or dermatitis, which frequently on clinical grounds was treated by thyroid.

Mr. G. G. Rennie (Argyll): It might be of interest to recall the occasion of peculiar symptoms in pigs that nearly drove a farmer and his wife frantic. They finally reported suspected swine fever, their name and address duly appearing in the then 6 p.m. instructions wire to him for visits in the midland counties of England. On arrival he was informed that of the 10 store pigs recently purchased, none had died, but showed peculiar disturbing symptoms. All of them kept mysteriously peering into the corner of the roof above the loose-box door and he also observed this listless canting of the head to one side and staring into the corner of the roof and that the pigs stood in a zig-zag fashion, one head above the back of the other. The diagnosis of mange, not swine fever, was made when the anxious expressions disappeared from the faces of the pigs immediately the last pig started biting and scratching the back of the pig in front. This explained the origin of the old idea that pigs could probably see air. (Laughter.)

Another, perhaps deceptive, wrongly diagnosed skin condition was exemplified in the instance of a lady who brought to a pony club meeting a light hunter which showed hacked, bleeding heels. Small tufts of matted hair were present on the legs and face. The lady stated that she had been treating the animal internally for an eczematous condition. A smear from the matted hair tuft examined microscopically demonstrated the first stage of the tick *Ixodes ricinus*, the cause of the trouble. Sheep dip application quickly cleared the condition.

It was a pity, perhaps, that the author, who had given them such a splendid paper on dogs, did not extend it to skin diseases of sheep or perhaps better still, to the hairless, scabby condition of the poor shepherd dogs that worked for a living. The walls of the stables, barns or houses in which these dogs lived could be seen crawling with ticks. Did the author think that the hairless condition of those sheep dogs was due mainly to mange, or would some of it be due to scratching and rubbing to dislodge the heavy tick infestation?

Mr. J. Adamson (Preston): What incidence of fish eczema in cats had the author encountered in neutered cats? It was his personal opinion that this could be associated with some glandular deficiency and a very good result might be obtained with 25 mg. testosterone implant.

It seemed unnecessary to attach a lot of importance to fleas in cats. Perhaps all of them who dealt with cats and used ether as an anaesthetic knew that practically every cat had fleas, the ether appearing to act as a stimulant to their activity.

The Reply

Mr. Jennings, in reply, said he was interested to hear what Mr. Lewis had to say about the use of vitamin B_{12} in cats with eczema. He had not used it himself and was unable to comment upon its use. He agreed that urticaria in dogs manifested itself mostly with swelling of the lips. It was because the body plaques were uncommon that they were mentioned in the paper. Until he had kept records of demodectic mange he too had thought that it was more common in smooth-coated dogs. The records showed that the squamous type was equally common in rough-coated dogs. He had used phenamidine in a limited number of cases but had not had much success with it. He was not able to say if ringworm in cats was more common in recent years. His impression was that it was not more common but that a more accurate diagnosis was being made. He agreed that a mercury vapour lamp with Wood's glass fitted was essential to those in small-animal practice. A diagnosis of ringworm could not be made with the lamp alone but it was useful for selecting hairs for microscopical examination. It would produce fluorescence only with microsporon and not with trichophyton.

He might agree with Major Chambers that the horse had been neglected and he would have liked to speak about skin diseases in the horse. The Provisional Committee, however, had requested that the paper be confined to small animals. The "scratching dog" was a hardy perennial. He had recorded many cases simply as "pruritus" and had never found a cause of this symptom. He thought a few lice could often be missed. The paper did make reference to *T. autumnalis* and to Steward's work. This mite could be responsible for pruritus in the period around July and August but not at any other time of the year.

Mr. Brander had referred to reactions of humans to fleas and lice. It reminded him how his wife and he used to visit an old lady and almost invariably return with a flea. These fleas produced painful reactions to their bite and the bed sheets showed the tell tale spots of blood. The old lady's bed sheets were spattered all over with blood spots and she carried numerous fleas in her hair and on the body but she never showed any signs of irritation. In exactly the same way one could see cats carrying numerous fleas and yet not reacting. Another cat would be sensitive to just an odd flea or two. He had read the literature to which Mr. Jones referred. He had not found it particularly convincing and had found no evidence of such fungus in this country in spite of careful search for it. Mr. Phillips asked about golden coloured dogs in relation to eczema. He had kept records of coat colours and they showed that eczema was not more common in golden coloured dogs. Similarly he found that eczema in the cat was not more common in castrates. He could not suggest to Mr. Wilson what made pekinese scratch if it were not the usual elusive larger ectoparasites. He had not noticed that they scratched any more than dogs of other breeds.

Some horses with eczema or "summer itch" appeared to rub against objects while others did not appear to rub.

Miss Uvarov suggested that eczema was used for "everything." R. L. Sutton, the American dermatologist, said "eczema has been a sort of dermatological scrap-heap out of which from time to time certain diseases which possess a characteristic and definite nature are extracted." Mr. Jennings' records did not show that stripping predisposed to eczema nor did it appear to follow ovaro-hysterectomy. The bacteriologists had frequently reported the finding of staphylococci in swabs he had taken from cases of eczema. He was not impressed, however, since staphylococci seemed ubiquitous where the skin was concerned. It was hard to say if impacted anal glands were a cause of eczema because one found impacted anal glands so commonly in so many dogs. While mange mites appeared so commonly to pass from dog to man, he had seen very mangy pigs reared in the same courts as calves and the calves remained free.

Mr. Rennie had raised an interesting point regarding the scratching pigs. He (Mr. Jennings) had supplied dressings for mange in pigs but the owners had not been worried about the scratching and had not used the dressing. The pigs, however, made spontaneous recoveries. Ticks were commonly seen on shepherds' dogs and on town dogs, after visiting the country, but he had not seen them cause eczema. He found sarcoptic mange common in the former. Regarding the use of arsenic in skin conditions, it was his humble opinion that arsenic never did the slightest bit of good and for that reason he had ceased using it. He would agree with Mr. Adamson that one saw cats with fleas but with no eczema. He had tried, however, to make the point that some cats were sensitive to the flea while others were not. At the recent international congress they had heard an excellent paper from R. F. Riek, of Queensland. He had shown that the horse with eczema was sensitive to a species of *Culicoides* while horses free of skin trouble were not sensitive to this insect.

Finally, Mr. Jennings thought his paper only touched on the fringes of this important subject. Skin diseases had been a sideline with him and he was too busy with other things to pursue the subject. He hoped, however, it might stimulate some of the younger members to take an interest in the subject. There was an enormous amount of experimental work that was waiting for someone to carry out. He would be glad to make suggestions to any who were interested, for the work would yield results, one way or the other, in a short period of time.

The Chairman: It would be agreed by all that they had had a very interesting discussion. It was a privilege and a great pleasure, on behalf of the Association, to offer to Mr. Jennings their thanks for his interesting paper on some aspects of dermatology and for so ably demonstrating his subject with comprehensive lantern slides.

Thanks were due to Mr. Lewis also for his able opening of the discussion. He had come a long way and they trusted he had enjoyed his visit. To all those members who spoke from the floor as well the meeting offered its very hearty thanks. (Applause.)

Miss Uvarov proposed that a vote of thanks be accorded to the Chairman for the excellent way in which he had conducted the meeting, and this motion also was carried by acclamation.

VETERINARY COLLEGE OF IRELAND BUILDING SCHEME

The final stage of a comprehensive improvements scheme to extend and enlarge the Veterinary College of Ireland at Ballsbridge, Dublin, is soon to begin. A three-storey extension to the north block has been built; with additional horse stalls on the ground floor, a new pathology laboratory on the first floor, and an examination and assembly hall on the upper floor. An extension to the three-storey building to form a new administrative block is now proposed.

* * * * *

Five or six fish new to science have been discovered by a recent research expedition to Portuguese East African waters, Professor J. L. B. Smith, the South African ichthyologist, said recently at Grahamstown. Professor Smith, who last December identified and brought back to South Africa a coelacanth, said the expedition had also discovered 50 species of fish not previously known in the seas around southern Africa.—*Reuter.*

* * * * *

Another field of possibility in the control of disease in animals lay in the use of the new radio-active substances produced at atomic research stations. So far only radio-active phosphorus had been used to investigate mineral metabolism, but others, though they had their dangers, might well have applications in animal as well as human medicine.—Mr. W. C. Miller, Director of the Equine Research Station, Newmarket, addressing the Debden Farm Club.

EPIZOOTIC OF MYXOMATOSIS AMONG RABBITS IN FRANCE*

BY

G. RAMON

As has been announced in the last Circulars sent by the International Office of Epizootics[1] to a great number of veterinary services throughout the world, an epizootic of myxomatosis[2] is at present spreading in France among wild and domestic rabbits.

The origin of the present outbreak is now ascertained.

It has not occurred *naturally* but has been *caused artificially* under the following circumstances:—

A landowner from the Eure-et-Loir Department (about 60 miles South-West of Paris) wishing to destroy wild rabbits which devastated crops on his farm, turned for this purpose to the myxomatosis ultravirus which had already proved very effective in this connection in Australia. He captured a few rabbits and inoculated them with the virus. The result soon became apparent and shortly afterwards all or nearly all the wild rabbits living on the premises of the farm were destroyed by myxomatosis.

However, despite the fact that the farm in question appeared to be surrounded by walls, the disease penetrated the neighbouring properties and created havoc since the myxomatosis ultravirus like many other micro-organisms ignores walls as well as frontiers.

The disease was identified by Jacotot & Vallée[3] last October on rabbits in the Rambouillet district, Seine-et-Oise Department, bordering on the Eure-et-Loir Department.

Rapidly, myxomatosis spread in warrens over France. At present the disease is prevalent in the centre, north, south and east of the country (only the west region seems to be still free from the disease), with the result that some 40 departments have been invaded and the neighbouring countries are now in danger. As far as can be estimated, myxomatosis would produce a 90 per cent. fatality and sometimes 100 per cent. in wild rabbits.

As must be expected, rabbit-hutches are affected by the outbreak in many an area. In that event insects and mosquitoes in particular would be carriers of the myxomatosis ultravirus.[4] One can also accuse birds of picking the bones of animals' corpses and thus of being vectors of the virus of myxomatosis, because it is difficult to explain the diffusion of the disease only by insects during winter and on long distances. There is no doubt that foodstuffs like freshly cut grass, etc., contaminated by the virus, can also play a part in the transmission of the disease from wild to domestic rabbits. Very recently, several cases of myxomatosis have been reported among *hares* (in the Isere, Oise and Loiret Departments). The diagnosis was confirmed experimentally.[4a]

It is admitted that *man* is not susceptible to the myxomatosis virus of rabbits and until now no cases of even mild contamination have been reported in man from the beginning of the epizootic.

During the last few months both the population and the public authorities have been fully aware of the gravity of the situation created by the epizootic of myxomatosis in France among wild and domestic rabbits.

An Order made by the Minister of Agriculture dated May 27th, 1953, added myxomatosis of rodents to the list of notifiable diseases and a decree of June 27th[5] established the conditions of operation of the Order and defined the measures to be taken in the *case of myxomatosis among domestic rabbits.*

As soon as the disease was identified and reported in France, various prophylactic means, for example *immunisation procedures,* were tried, particularly on domestic rabbits.

We know that the inoculation of the ultravirus of Shope's fibromatosis,[6] which is a very mild and never fatal affection of rabbits, develops in rabbits conditions refractory to myxomatosis. Domestic rabbits which have recovered from fibromatosis are protected against the myxomatosis infection caused either by contact or by inoculation.[7] According to Hyde[8] the protection conferred by fibromatosis against the myxomatosis virus develops very rapidly within three to four days under experimental conditions.

During the last few weeks immunisation procedures have been carried out in France on a rather large scale. The vaccine is prepared from fibroma artificially produced by inoculation of the rabbit fibromatosis virus. The tumours which contain the virus in large amounts are ground and the vaccine is prepared with the virus thus obtained suspended in a glycerinated fluid. It is, therefore, a *live virus.* The procedure of immunisation which uses the causal agent of fibromatosis, a mild disease, in order to protect against myxomatosis, a very serious and practically always fatal disease, can to some extent be compared to the immunisation against smallpox by means of the vaccinia virus.

However, it is too early to appreciate the efficacy achieved in the field by the immunisation of rabbits against myxomatosis, as the procedure had previously been established under experimental conditions. It is therefore necessary to wait before giving any definite conclusions. It should not be forgotten either that in this particular matter relating to a technique of immunisation one must not pass suddenly from laboratory practice to generalised practice in the field. It is necessary to proceed by successive steps.

And even if we admit that vaccination can protect a more or less high number of rabbit-hutches, it seems doubtful that it is capable of stopping an epizootic of this nature on account of the extremely subtle contagion which characterises the present outbreak and on account also of the diffusion of the virus by wild rabbits that are extremely difficult if not impossible to protect by immunisation and which therefore play and, for a long time will continue to play, the rôle of reservoir of the virus.

On the other hand, considering the knowledge that we have gained on the living ultraviruses used as vaccines and on the defects if not the dangers presented by them[9] it may

* Extended abstract-translation of article published in the *Bulletin de l'Office international des Epizooties.* **39.** Nos. 9–10. Sept.-Oct., 1953.

[1] *Circulars, International Office of Epizootics.* No. **78** (July 7th, 1953) and No. 79 (August 5th, 1953).

[2] As is known, myxomatosis—a disease caused by an ultravirus—was demonstrated by Sanarelli in 1896 in Uruguay. Later on the infection was found again in various regions of the New Continent.

[3] Jacotot, E., & Vallée, A. (1953). *Bull. Acad. Vét.* **26.** 25. See also Drieux, H. (1953). *Rev. Path. Comp.* **52.** 110.

[4] In this respect, refer to Bull, L. B., Ratcliffe, F. N., & Edgar. G. *XVth International Veterinary Congress,* Stockholm, 1953.

[4a] An article on this subject will shortly be published in the *Bulletin.*

[5] *Journal Officiel* de la République française. (June 27th, 1953). No. 149. 5732.

[6] Shope, R. E. (1932). *J. Exp. Med.* **56.** 793 and 803.

[7] ———. (1938). *Proc. Soc. exp. Biol.* **38.** 86.

[8] Hyde. (1939). *Amer. J. Hyg.* **30.** 47.

[9] I have already dealt with this question in a special Report to the XVth International Veterinary Congress ; this report has been published in English in the *Bulletin de l'Office international des Epizooties.* (1953). **39.** No. 7–8.

be asked whether the virus of fibromatosis is not capable of developing a higher virulence and pathogenicity in the vaccinated rabbits, thus creating a new form of the disease. Already in the course of experiments carried out on a small number of animals, Andrewes[10] and Andrewes & Shope[11] had observed a mutation in the strain of fibromatosis which had caused the occurrence of an atypical strain with the development of much more inflammatory lesions than those with the original strain. On the other hand, Shope had reported[12] that on domestic rabbits which had recovered from fibromatosis and then were inoculated by the testicular route with the myxomatosis virus, the latter is not destroyed and may be transferred serially by the same route to other rabbits which had previously suffered from an attack of fibromatosis, without deterioration of its killing power for the control rabbits. It can also be asked whether in an epizootic period of myxomatosis, rabbits vaccinated by means of the fibromatosis ultravirus, when they are contaminated by the virus of myxomatosis, could not become carriers and vectors of the latter virus.

All the various observations made by the most experienced workers, such as Shope, together with the possible consequences which may occur in the field, inculcate caution till evidence of the innocuity and efficacy of the immunisation procedure as is used now be given.[13]

. . . .

Such is the present situation as regards the epizootic of myxomatosis which is now prevalent in France among wild and domestic rabbits. The disease is spreading rapidly; almost the whole of the French territory is invaded and the regions bordering on frontiers are in danger. This is why I have been anxious, on behalf of the *International Office of Epizootics*, to give this information in order to guard the European veterinary services against the danger and notably those of the countries which are neighbouring on France.

Such an epizootic is very grave in itself and also in its consequences, notably on account of the fact that not only wild rabbits are affected by the disease but so are now domestic rabbits and hares.

It is, indeed, the first time, the origin being an isolated *man-made outbreak*—and I stress this very important point—that an epizootic has developed within a few months only and has diffused so rapidly.

This shows the necessity of being both cautious when one deals with viruses and vigilant when it is a matter of introducing either viruses in particular in a country or animals which can be virus carriers because they come from countries where ultravirus diseases exist such as rinderpest and foot-and-mouth disease, etc.[14]

The present epizootic of myxomatosis which exists in France brings up a number of scientific, technical, economic and possibly legal problems of national and international character.

The International Office of Epizootics will not fail to follow and study the development of these problems as has been done to-day under my guidance and direction with the object of keeping the veterinary world informed.

ADDENDUM

As a supplement of information as regards myxomatosis, we wish to reproduce hereunder the following information published recently in *The Veterinary Record*, July 25th, 1953. **65.** 478.

Myxomatosis Virus Ridding East Australia of Rabbits

Dr. Ian Clunies Ross, Director of the Commonwealth Scientific Industrial Research Organisation, told a conference of interested organisations (says *The Times*) that the imported virus myxomatosis had destroyed four-fifths of the rabbits in eastern Australia with a big resultant increase in primary production. This, last season alone, could be valued at more than £A.50,000,000.

The C.S.I.R.O. is now studying the problem created by the increasing proportion of rabbits recovering from the disease, which although not yet significant, might become an important factor in the future. Sir Macfarlane Burnet, the leading Australian authority on virus diseases, told the conference that the fact that strains of virus with lower killing power had been encountered in some areas meant, at the worst, that myxomatosis would produce a 90 per cent. kill, whereas the original virus had a killing power of more than 95 per cent.

. . . . .

Important Note

Just at the time of printing the present number of the *Bulletin*, we received a letter from Dr. Duhaut, Director of Veterinary Services, Belgium, in which information was given that the State Laboratory for Diagnosis and Veterinary Research in that country has confirmed the presence of myxomatosis among wild rabbits in Belgium on the territories of the localities of Houthulst, Grimbergen and Mol.

In addition, the disease has affected domestic rabbits in the locality of Moere near the French frontier.

The infection seems to diffuse slowly. It has not yet been possible to estimate the mortality rates.

Myxomatosis is now classified among the notifiable diseases and measures of sanitary policy are applied.

. . . . .

Furthermore, according to information now confirmed officially, myxomatosis has recently penetrated into Germany and Holland.

It is to be noted that the possible extension of the disease was foreshadowed in my first publications on the subject.[15]

[10] Andrewes. (1936). *J. Exp. Med.* **63.** 157.
[11] Andrewes & Shope. (1936). *Ibid.* **63.** 179.
[12] Shope. (1936). *Ibid.* **63.** 43.
[13] Already outbreaks of myxomatosis have been notified among domestic rabbits which had been immunised a few weeks before.
On the other hand, serious inflammatory reactions have been reported from various sources among vaccinated rabbits.
Besides the "live" virus vaccine being prepared from tumours which develop after inoculation of fibromatosis into rabbits, attention should be drawn to the possibility of the virus vaccine being contaminated by another virus (virus of myxomatosis ? etc.) or by microbial agents (*pasteurella* for example) which may be harboured in rabbits producing the "tumours."
[14] In that respect refer to the reports, memoranda, articles, etc., published in the last few years in the *Bulletin de l'Office international des Epizooties*. See in particular, Ramon, G. : "Technical Reports," *Bulletin de l'Office international des Epizooties*. 1950 (XVIIIth Session), 1951 (XIXth Session), 1952 (XXth Session), 1953 (XXIst Session).
[15] In the French text refer to (*a*) the resolution adopted at the XVth International Veterinary Congress, Stockholm, relatively to the use of vaccines against infectious and epizootic diseases, and (*b*) historical documents on the attempts made by Pasteur regarding the destruction of wild rabbits by the fowl cholera micro-organism.

RABIES RESTRICTIONS EASED IN ALBERTA

The rabies outbreak which has existed in Alberta for over a year, particularly in the northern regions, now appears to be under control (reports the Calgary correspondent of *The Times*) and restrictions on the movements of dogs have been removed in that part of the province lying south of 53 degrees north latitude.

Systematic destruction of predators in the northern regions which began when the outbreak was first confirmed has resulted in the killing of 35,000 foxes, 50,000 coyotes, 3,000 wolves, 1,700 bears, and 3,000 lynx.

CLINICAL COMMUNICATIONS

BLACKQUARTER IN PIGS

N. B. ORFEUR, M.R.C.V.S.
AND
H. F. HEBELER, M.R.C.V.S.

Subjects.—Three large black pigs, aged four months.

History.—The pigs were part of a litter of six that had been housed in the same concrete sty for two months, in a knacker's yard. There were about 70 pigs of all ages on the premises. The sties were about 30 yards from the slaughterhouse.

The pigs were found dead one morning, having appeared perfectly healthy the night before. Unfortunately, the carcases were opened immediately in the slaughterhouse, and were not seen until about one hour later.

Lesions.—The three pigs which had died were the best "doers" in the litter. The anterior part of the carcases, from the shoulder forwards, showed changes resembling blackquarter in cattle. The muscles varied in colour from pale to dark red, and the intermuscular and subcutaneous connective tissue was distended with gas. Between the muscles there was a small amount of red-brown exudate. The characteristic rancid smell of blackquarter was present, but only slightly noticeable.

The liver, heart and kidneys showed degenerative changes, and there was a small amount of blood-stained fluid in the abdominal and thoracic cavities. There were no skin wounds on any of the pigs. A portion of muscle was sent for bacteriological examination and guinea-pig inoculation showed the presence of *Cl. septique*.

Source of Infection.—The obvious source of infection was the slaughterhouse. However, no pigs have been lost in this way before, although they have been housed close to the slaughterhouse for several years. The slaughtermen have seen several similar cases during the last 18 months in pigs from another farm in the district.

During the two weeks before the pigs died, the staff in the slaughterhouse had been looking after the pigs in the absence of the regular pigman and this, coinciding with the arrival of several blackquarter carcases, may have been responsible.

In view of the sporadic nature of this outbreak no policy of immunisation was introduced. The owner was advised to have completely separate staff arrangements for the slaughterhouse and the piggery. The remaining three pigs in the litter showed no symptoms on examination, and the owner sent them for casualty slaughter.

Discussion

The nature of the lesion in the muscles, and the laboratory report, establish *Cl. septique* as the probable cause of death, although this organism is a common *post-mortem* secondary invader.

The case has been recorded as it does not appear to be common in pigs. It may be that, as in this outbreak, it is confined to the odd case where special circumstances have resulted in a sudden and very heavy infection. *Cl. septique* infection of skin wounds resulting in so-called "malignant oedema" appears to be more common.

Another interesting feature was that, as is so often seen in blackquarter in cattle, the affected animals were those in the most forward condition.

A CASE OF TRUE "LOCKED JAW" IN THE DOG

W. J. DALE, O.B.E., M.R.C.V.S., R. W. J. KNIGHT, M.R.C.V.S., AND E. M. PITTAWAY, M.R.C.V.S.
Coventry

We wish to report a somewhat unusual occurrence, the subject being a five-year-old Wire Haired Fox Terrier which was brought to our surgery suffering, in its true sense, from locked jaw. The history was such as to arouse doubt, were it not for the presence of the animal and the obvious material evidence of the owner's statement.

The dog was apparently annoyed by the local paper girl, who waved a newspaper in front of its face. The dog snapped at the newspaper. Two small pledgets of paper jammed bilaterally between the upper corner incisor and lower canines (see photograph), locking the jaws so thoroughly that it was impossible to separate them by hand. The animal was anaesthetised with a small dose of Kemithal, and the jaws were then levered apart with large artery forceps, requiring considerable effort.

The teeth showed a small amount of distemper pitting on the surfaces, noticeably where the paper jammed; this, plus the swelling of the newspaper due to wetting with saliva, appeared to be contributory.

"INFECTED MEAT SPREADING SWINE FEVER"

In its issue of October 30th *The Farmers' Weekly* records that a suggestion that the Ministry of Food meat salvage system was perpetuating swine fever was made at a conference of Herefordshire pig producers.

"Dr. A. J. Wilsdon, Divisional Veterinary Officer for Herefordshire, said a recent Ministry return showed 10,000 report cases of dead pigs all over the country. There had been about 2,500 outbreaks of the disease on farms, and approximately 1,500 cases were never confirmed because the pigs went to the slaughterhouses. 'Many of these pigs are coming out again as infected pork and bacon,' said Dr. Wilsdon, 'because they are killed in the incubation stage.

"'In this system of Ministry of Food salvage in this country we are perpetuating the disease. We had two cases in this county where the disease was spread by butchers' vans.'"

ABSTRACTS

Effect of Hexachlorcyclohexane on *Demodex* of Dogs*

The author states that while BHC dips effectively cure mange in large animals they fail to cure demodectic mange of dogs. He had found by feeding bugs on small animals that subcutaneous or oral administration of BHC was followed by the appearance of the drug for a short time in the blood stream and he had therefore used these methods of administration for the treatment of dogs infected with *Demodex*. Directly after this treatment there was a more or less marked migration of all stages of the mites out of the hair follicles on to the surface of the body, where it was possible to attack them with substances toxic to them.

Under natural conditions, the author says, *Demodex* leaves the hair follicles when the skin of the dog is damaged or when its external environment on the dog is altered ; it can be artificially decoyed out of the follicles by warming the skin of the dog. This occurs naturally when dogs lie close together and *Demodex* may then pass from one dog to another. Puppies a few days old may thus be infected by mites passing to them from the mother. Transmission in this manner occurs, however, only when there is long-continued contact of areas with either short hairs or with practically none at all. The movements of the mites are irregular. They cease at 17° to 26° but the mites are active at 40°, at which temperature a mite can travel up to 0·3 mm. per minute. Only the adults and the second nymphs can move on a firm substratum.

Demodex is found not only on dogs with demodectic mange but also on healthy dogs, and it seems that it is pathogenic only when its environment provides conditions which encourage its mass-multiplication. Clinical demodectic mange then appears. Important also are factors which induce the resistance of the dog, especially the resistance of its skin. Among such factors are the changing of the teeth, rapid growth, faulty nutrition, lack of vitamins, puberty, skin affections or irritation of the skin by urine or saliva and perhaps excessive care of the skin by frequent baths or washes with skin irritants. Infection with intestinal worms is an especially important factor.

Treatment must take into account the biology of the mites. The dog's resistance and general condition should be improved by giving it good and varied food rich in vitamins and by skin massage and general care of its body ; but baths should not be too frequent. Causes of other diseases, and worms especially, should be removed. The author treated 17 dogs and obtained complete cure of 16 suffering from pustular and squamous demodectic mange.

For treatment he used 4 to 5 per cent. solutions of BHC (total isomers) or of gamma-BHC in poppy oil. Dosage used varied according to nutritional state, age and degree of disease from 20 to 80 mg. of the technical material per kg. bodyweight and from 10 to 20 mg. per kg. of gamma-BHC. Subcutaneous administration may be accompanied by abscess-formation at the injection sites, but there is the great advantage that marked healing of the pustular type of mange takes place in a few days. Abscess formation does not occur when the drug is given orally, but the dose must then be calculated very carefully, because overdoses may affect the kidneys and liver. The death of one of the 17 dogs treated was due to rubbing the drug in oily solution into the skin. Absorption from the skin occurred and, although the subcutaneous dose given was small, this well-nourished and only lightly affected Boxer dog died.

G. L.

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Q Fever in Great Britain*

In 1937 the disease was observed at Brisbane in abattoir workers and was given the tentative name of Q fever by Derrick. It was not, however, until 1948 that the first cases were discovered in Britain.

The Australian workers established the fact that infection could be conveyed via the droppings of affected ticks which were shown to be naturally infected, but inhalation of the dust-laden air in the abattoirs seemed to be the likely method. With this observation in mind it was thought that the tick might well play a significant part in the transmission of the disease in this country, but subsequently it has become clear that the peculiar distribution of this insect in England does not conform to that of Q fever. It does appear, however, that contact with animals and animal products has a considerable bearing upon the incidence of the disease.

Rickettsia burneti, now established as the cause of the disease, has been isolated from blood, sputum and urine of human patients. From the veterinary point of view it is significant that the principal sources of infection are cattle, sheep and goats, the organisms being secreted in faeces, urine, milk, placenta and foetal membranes. But in this country to date no reservoir other than cattle has been found. There is no reason, however, why sheep and goats should not also become infected.

Though the disease is widely distributed it appears to be more concentrated in certain areas. In Kent, for instance, the incidence is high, but no clinical case has yet been identified in East Anglia. Following identification of the disease in the former county the examination of milk samples from 1,031 herds of cattle showed that 8·2 per cent. of the herds were excreting *R. burneti* compared with 0·85 per cent. in East Anglia and 2·7 per cent. in Devon.

Whilst patients have been identified in many walks of life, the number of clinical cases does not make it possible strictly to classify the hazard except in a general way. In a survey of 69 cases, 13 were in industrial workers, 10 clerical workers, seven housewives and eight agricultural workers, including at least three veterinary surgeons. Twenty of these were exposed directly by virtue of their occupation, and 22 had paid visits to or had lived near farms or had contact with nearby animal-produce factories. Twenty-eight regularly consumed raw milk. Incidentally, a veterinary surgeon and his trainee both developed Q fever three weeks after they had manually removed placentas in an endemic area.

The results of a further survey carried out in California are of considerable interest. In this instance every effort was made to establish the origin of infection, special attention being paid to the contact of patients with farm animals and animal products, etc. It was found by serological test that 10·7 per cent. of cases occurred in households which drink raw milk as compared with an incidence of 0·09 per cent. in households which do not, and that there was an incidence of 5·9 per cent. amongst employees in meat packing plants as compared with 1·2 per cent. in workers in aircraft factories.

As a clinical entity Q fever is often difficult to distinguish from other fevers associated with primary atypical pneumonia. It is, however, more sudden in onset than such cases and

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* **On the Effect of Hexachlorcyclohexane, given Perorally and Subcutaneously, on *Demodex* of Dogs.** (Trans. title.) Borchet, A. (1953). Proc. XVth Int. Vet. Congr., Stockholm. 1. 433-436.

* **Q Fever in Britain : An Analysis of 69 Sporadic Cases, with a Study of the Prevalence of Infection in Humans and Cows.** (Marmion, B. P., *et al.* (1953). *Lancet*. **264**. 503-510.

there is a headache out of all proportion to the fever. Some patients may suffer from a febrile illness without any pulmonary involvement, the fever lasting from 5 to 20 days. Between January, 1949, and January, 1952, 117 cases of Q fever were diagnosed in this country. Of these, 46 could be accounted for in two explosive outbreaks, and some interesting observations were recorded in relation to the remaining 69 sporadic cases. The fact that 58 of the 69 were males is regarded as significant. The age distribution of 66 of these patients was such that 92 per cent. were between 20 and 60 years of age, *i.e.*, within the working age group. Sixty-one of the 69 patients developed a characteristic attack, 43 having a primary atypical pneumonia. The other 18 had a febrile illness without any pulmonary involvement. Seventeen untreated typical cases had a duration of anything from 5 to 20 days, but it was found that most of the patients that had an atypical attack convalesced rapidly when the fever had subsided. Five, however, suffered from malaise and debility lasting for several months and there were three relapses. N. S. B

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The Epizootiology of Bovine Q Fever*

The writer describes two experiments in which an attempt was made to investigate the mode of infection in bovine Q fever. Observations that the causal organism *Rickettsia burneti* has only been found in the milk suggest that infection is a local one of the mammary gland. In order to test the susceptibility of the udder to direct infection, therefore, the teats of five lactating cows were dipped into infected milk for a period of eight months, but in no case was infection established. Later these same cows were submitted in the same way to concurrent infection with *Str. agalactiae*, and although three cows contracted infection with this organism, *R. burneti* was transmitted to none. From this experiment the author concludes that it is improbable that the milking procedure is an important factor in the dissemination of Q fever in the herd.

In a second experiment, further information on the route of infection was obtained by subjecting 21 cattle of various ages to the inhalation of aerosol sprays containing *R. burneti*. Most of these animals developed complement fixing antibodies against this organism and it was recovered from the milk, placenta, urine and vaginal washings of two cows. The presence of the organisms in the placenta is in accord with its recovery from 13 out of 33 serologically positive cases in naturally infected herds. S. J. E.

* **Observations on the Epizootiology of Bovine Q Fever.** Stoenner, H. (1953). Proc. XVth Int. Vet. Congr., Stockholm. 1. 290-295.

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The Place of the Veterinary Surgeon in Food Sanitation*

The prevention of food poisoning is the chief function of the veterinary surgeon in charge of food inspection, and a rigorous examination of all emergency slaughter cases is now prescribed by law in many lands. Salmonellae infections occur throughout Europe, and a most important rôle in food poisoning is played by *Salmonella enteritidis*, *S. typhimurium* and *S. cholerae suis*. Pathological changes in organs and glands are no certain indication of the presence or absence of pathogenic organisms. Most salmonella infections are due to human carriers employed in butchers' shops. Health authorities must exercise control over meat handlers.

Putrefaction is a cause of poisoning especially in hot weather, when organisms of the proteus and colon groups as well as others are active. Incipient and intermediate stages of decay are the most dangerous, especially in minced meat, smoked, brined and pickled fish and crustaceans. In the first stage of decay poisonous amines are formed from the amino-acids, and as decay proceeds the harmful amines are destroyed by decomposition and resynthesis. (Hence the eating of highly decayed meat without serious consequences.) Putrefactive toxins are not always destroyed by heat. Cooling of meat is most essential as a preventative.

Human beings with sores on the hands may convey staphylococci to the meat, especially *S. aureus haemolyticus*, which can propagate rapidly in sausage meat. *B. botulinus* spores occur in swine excrement. Botulism occurs sporadically among cattle, horses and sheep. Symptoms are a bulboparalysis. Slaughtered animals so affected should be subjected to a bacteriological examination. The veterinary surgeon should be continuously supervising food shops, food establishments, processing plants, etc.

In catering kitchens it is important to inspect spices, as they are often contaminated with spores of aerobic bacteria such as *Mesentericus subtilis*. Fish market inspection is most important for the veterinary surgeon, as fish poisoning is greatly feared in all countries. The veterinary surgeon must not only undertake the inspection but must become adviser to the food industries. For this he needs a good technical training in food processing, as mere meat inspection is not enough. Co-operation should exist between the physician, veterinary surgeon and food chemist. D. J. A.

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The Development of Drug Resistance in Trypanosomes*

The author describes the response to drugs of five strains of *T. congolense* which became resistant under field conditions. The Kwakabasi strain developed resistance to dimidium bromide in an area of heavy tsetse fly density. When transmitted to clean cattle the infection resisted treatment with dimidium bromide at 2 mg. per kg., but was cured by antrycide dimethylsulphate at 5 mg. per kg. Surviving cattle from this area were moved to a fly-free area, Poi, and the strain passaged through clean cattle, when it was found to be still resistant to phenanthridine drugs three months later.

The Kikumeni strain was found to be resistant to antrycide sulphate at up to 5 mg. per kg., and also to dimidium bromide at 2 mg. per kg., as well as to both drugs in combination. Nevertheless, a herd of 20 animals was maintained in the area for two years by the judicious use of the antrycide prosalt.

The Thwake strain arose from dimidium bromide-treated cattle, but there was a promising response to antrycide sulphate at 3 mg. per kg. Later, cure was effected by dimidium bromide at 2 mg. per kg., although there were relapses with antrycide sulphate at 5 mg. per kg. Thus this strain was resistant to antrycide and susceptible to dimidium bromide although the parent strain when first isolated was almost cured by antrycide sulphate at 3 mg. per kg.

* **The Place of the Veterinary Surgeon in Food Sanitation, with particular attention to Foods of Animal Origin.** Schönberg, F. (1953). Proc. XVth Int. Vet. Congr., Stockholm. 1.

* **The Development of Drug Resistance in Trypanosomes.** Wilson, S. G. (1953). Proc. XVth Int. Vet. Congr., Stockholm. 1. 12-17.

The Makuyu strain was similar to the Kwakabasi strain, being resistant to dimidium bromide and susceptible to antrycide.

The Gede strain is an example of the use of antrycide pro-salt in suppressing drug resistant strains. It arose from the treatment of cattle in a fly belt with the antrycide methyl sulphate at 1 gramme per adult. The strain was found resistant to 5 mg. per kg. Subsequent treatment of the herd with a mixture of the antrycide salts, 1 gramme of the chloride plus 1·25 gramme of the sulphate, stopped the losses, treatment being at two to three monthly intervals.

D. L. H.

REPORT

[Northern Rhodesia: Annual Report (1952) of the Department of Veterinary Services.]

In this report Mr. J. H. N. Hobday, Director of Veterinary Services, sets out the general policy of the department which is: "to protect and foster the livestock industry, promote its growth and productivity and generally to assist in providing the territorial requirements of livestock products." Now that the more serious diseases have been either eliminated or brought under control the department is able to devote more time to livestock production and marketing. Although beef rationing has been discontinued local supplies of beef are not yet sufficient to meet the colony's requirements and this holds good also for dairy products. To make the colony ultimately self-supporting in animal products is an inspiring incentive to the department to continue its present policy of enlarged flocks and herds and increased livestock productivity.

There were no major epizootics among cattle during the year, although streptothricosis is mentioned as giving cause for concern. Trypanosomiasis and tick-borne diseases remained the chief causes of illness and loss of productivity. The former was dealt with by large-scale treatment with dimidium bromide, and tick control was effected by the use of portable power sprays in places where dipping tanks could not be used. The control of tick infestation in cattle received particular attention from Professor J. G. Matthyas, of Cornell University, whose services were made available under the M.S.A. programme. The efficiency of various modern insecticides was compared, also the value of the different methods of applying them. Present indications are that the deposition of insecticides on the skin and hair of animals by means of fog generators is less likely to be effective than liquid sprays and dip washes. This work has demonstrated that under African conditions there is a wide field of application for the portable power spray. By this method of application as many as 350 cattle an hour can be effectively dealt with. Rabies receives special mention as again being prevalent and a cause of human deaths. Supplies of Flury's avianised vaccine have been brought into use and compulsory vaccination is under consideration. Artificial insemination, using Friesian and Jersey bulls, grew in popularity. The growing number of new farmers in the colony, many with little knowledge of tropical farming, has necessarily caused an increased demand for the services of the department.

From the annual report of the Acting Chief Veterinary Research Officer (Mr. G. D. Shaw) the following has been extracted:—

Newcastle disease, now diagnosed in the country for the first time and coming from sources unknown, has been successfully combated by the use of live vaccine (Komarov). This vaccine gives a strong immunity and interferes very little with egg production.

Posterior paralysis in horses appeared in the rainy season and caused a heavy mortality. *Nuttallia equi* infection was demonstrated in the blood of all cases. The symptoms were jaundice and motor weakness and paralysis, usually of the hind quarters. Incontinence of urine occurred regularly and marked leucopenia was common. Cases have recovered after prompt treatment with gonacrine, pirevan and non-specific protein injections. Good results were also reported from injections of neutral flavine. A somewhat similar condition occurs in bovines and male stock of exotic breeds are particularly susceptible. In recovered animals there is permanent atrophy of the muscles of the lumbar region. On *post-mortem* examination thickening of the sciatic nerves and atrophy of the gluteal muscles are observable. No infective agent has been isolated.

Bovine malignant catarrh broke out among store cattle grazing in close contact with herds of wildebeest, and in animals severely affected the mortality was 100 per cent. Less seriously affected animals developed ocular lesions and blindness, which necessitated slaughter.

In investigations into streptothricosis it was found impossible to transmit the disease by subcutaneous, intradermal, intramuscular and intraperitoneal injection and by skin scarification. An interesting observation was the discovery of the disease in four calves within 48 hours of birth. The most successful treatment has been the parenteral administration of organic arsenicals. The control of the disease is closely linked with the control of tick infestation.

Animal husbandry also received attention. In comparative breeding experiments commenced in 1947 it has been found that the production of the pure-bred native herds has exceeded that of any exotic cross-bred groups. This superiority is due to the lower maternal and calf mortality, to higher calving percentage, and to higher dressing out percentage.

Acclimatisation observations were made on Boran cattle imported in 1951. At an early age these animals appear to have a high heat toleration co-efficient but are less capable of maintaining body temperature under cold conditions. They lose weight during prolonged cold spells even when given supplementary feeding.

Work has been started to investigate the possibility of improving the mutton quality of local sheep by the introduction of exotic blood.

The cattle population of the colony numbers 925,758, of which 121,395 are European owned. There are also 123,677 sheep and goats and 46,000 pigs.

W. W. H.

Gala Circus.—As was announced in our last issue, H.R.H. Princess Margaret is to attend a gala performance of Tom Arnold's Circus at Harringay Arena on December 21st, to raise funds for the Animal Health Trust. Tickets for this special night are available from the head office of the Trust at 232/235, Abbey House, Victoria Street, London, W.1, and from Mrs. Madge Clarke, 79, Davies Street, W.1.

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WEEKLY WISDOM

Food-producing soil has no substitute.—Sir JAMES TURNER (President, N.F.U.).

NOTES AND NEWS

Diary of Events

Nov. 14th.—Meeting of the Biochemical Society, St. Mary's Hospital Medical School, 11.30 a.m.

Nov. 18th.—Meeting of the South-Eastern Division, B.V.A., at Maidstone (Royal Star Hotel), 2.30 p.m.

Nov. 18th.—Royal Microscopical Society: First Scourfield Memorial Lecture: Professor F. W. Jane "The Frontiers of the Plant and Animal Kingdoms," Tavistock House, W.C.1, 5.30 p.m.

Nov. 19th.—Meeting of the Herts and Beds Division, B.V.A., at Luton (The George Hotel), 7.30 p.m.

Nov. 19th.—Research Defence Society's Stephen Paget Memorial Lecture, University College, Gower Street, W.C.1, 5.30 p.m. (Professor Sir James Learmonth: "The Surgeon's Debt to Animal Experiment.")

Nov. 25th.—Meeting of the Scottish Branch, B.V.A., in the Royal (Dick) School of Veterinary Studies, Edinburgh, 2.30 p.m.

Nov. 25th.—Meeting of the Lancashire Division, B.V.A., in the Lecture Theatre of the Geology Department, University of Liverpool, 2.15 p.m.

Nov. 27th.—Meeting of the Society for the Study of Animal Breeding at the Wellcome Research Institute, Euston Road, N.W.1, 2.15 p.m.

Nov. 27th.—Annual General Meeting of the North Wales Division, B.V.A., in the Council Chambers, Ruthin, 2 p.m.

Nov. 27th.—Meeting of the Royal Counties Division, B.V.A., at Reading (Caversham Bridge Hotel), 2.30 p.m.

Dec. 4th.—Annual Dinner and Dance of the North Wales Division at Llandudno (St. George's Hotel), 7 p.m. for 7.30 p.m.

Dec. 18th.—Meeting of the Midland Counties Division, B.V.A., at the Birmingham Medical Institute.

R.C.V.S. Membership Examinations

Dec. 10th.—M.R.C.V.S. Written Examinations.

Dec. 11th.—M.R.C.V.S. Written Examinations.

Dec. 14th.—M.R.C.V.S. Oral and Practicals commence (Panels "A" and "B").

B.V.A. Committee Meetings

The following are the arrangements for the next meetings which will be held in London on Thursday and Friday, November 26th and 27th, 1953:—

Thursday, November 26th

11.0 a.m. Meeting of Sub-committee *re* Calf Husbandry and Diseases.

Friday, November 27th

10.30 a.m. Meeting of Technical Development Committee.

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PERSONAL

Kellogg Scholarship for Veterinarian

A letter has just been received from Stuart Young, M.R.C.V.S., D.V.S.M., from Michigan State College, East Lansing, U.S.A., where he has gone on a Kellogg Scholarship to spend a year studying pneumonia in sheep under Dr. Thorpe, head of the research department.

Two other members of the North of Scotland College of Agriculture were awarded Kellogg scholarships and are now studying agricultural subjects in the United States.

While carrying out his investigations into infectious and virus pneumonia in sheep Mr. Young will during his first two terms attend lectures on pathology as a main subject and bacteriology as a secondary subject. In the final term he will confine his attentions solely to pneumonia in sheep. It would appear that pneumonia is a serious disease amongst sheep in Michigan State during the winter and spring months and it is hoped that the course of study will assist Mr. Young in continuing his investigations into pneumonia in sheep which has become so prevalent in the North of Scotland during the last few years. P. L. S.

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Appointments.—Edinburgh University Court have approved the following appointments to Lectureships: Veterinary Bacteriology, Mr. Gordon Fraser; Veterinary Hygiene, Mr. I. S. Robertson; Veterinary Surgery, Mr. J. C. Wilson.

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Birth.—Roberts.—On October 31st, 1953, to Barbara and Jim Roberts, M.R.C.V.S., Newmarket, a son—James.

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Will.—Mr. David Coull, M.R.C.V.S., of St. Thomas Road, Brentwood, who died on August 5th, intestate, left £7,202 1s. 11d. net.

Mr. and Mrs. J. W. Rider's Diamond Wedding

Their innumerable friends within the profession and beyond would wish us, in their name, to extend heartiest congratulations to Mr. and Mrs. J. W. Rider, of 14, Ashtrees Gardens, Gateshead. We regret to learn that nowadays neither enjoys the best of health, but are sure that this in no way diminished their pleasure in the quiet celebrations on the great day, November 6th. Mr. Rider, who retired in 1940, will long be remembered for the special interest he took in the welfare of the ponies at the collieries in County Durham where he practised his profession, while Mrs. Rider, who is a lady very well known in the North-East, also has devoted much effort to promoting the interests of the Victoria Veterinary Benevolent Fund.

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R.C.V.S. OBITUARY

Kerr, Percival James, M.R.C.V.S., Major I.V.S. (retd.), of 72, Lonsdale Road, Oxford. Graduated London, July 20th, 1906. Died suddenly, November 4th, 1953.

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Myxomatosis in Rabbits*

Personnel of New Advisory Committee

As was announced in our issue of last week, the Minister of Agriculture and Fisheries and the Secretary of State for Scotland have appointed a Committee to advise them on the problems arising in connection with myxomatosis in rabbits and the action that should be taken by the Government. The following have agreed to serve on the Committee, which held its first meeting on November 4th:—

Lord Carrington, M.C., Joint Parliamentary Secretary to the Ministry of Agriculture and Fisheries (Chairman).

Earl of Dundee—landowner and farmer; former Parliamentary Under Secretary of State for Scotland.

Lord Merthyr, Chairman of the Royal Society for the Prevention of Cruelty to Animals.

C. H. Andrewes, M.D., F.R.C.P., F.R.S., Deputy Director of the National Institute for Medical Research and a leading virologist.

H. Collison, Member of the General Council of the Trades Union Congress and General Secretary of the National Union of Agricultural Workers.

J. W. Evans, M.A., SC.D., D.SC., Deputy Chief Scientific Officer, Ministry of Agriculture and Fisheries.

H. Gardner, C.B.E., Under Secretary, Ministry of Agriculture and Fisheries.

Professor R. E. Glover, M.A., B.SC., F.R.C.V.S., President of the Royal College of Veterinary Surgeons.

J. Scott Henderson, Q.C., Recorder of Portsmouth and Chairman of the Committee on Cruelty to Wild Animals.

The Hon. Mrs. George Lane, an eminent parasitologist.

G. T. Plumb, Assistant Secretary, Board of Trade.

J. N. Ritchie, B.SC., M.R.C.V.S., D.V.S.M., Chief Veterinary Officer, Ministry of Agriculture and Fisheries.

J. C. Sandford, B.A., author and lecturer on rabbit husbandry; member of National Council for Domestic Food Production.

W. H. Senior, F.R.S.E., Assistant Secretary, Department of Agriculture for Scotland.

Major R. B. Verney, a landowner in Buckinghamshire.

H. Woollev—a leading Cheshire farmer.

The Secretary to the Committee is Mr. L. R. Sankey, of the Ministry of Agriculture and Fisheries, Hook Rise, Tolworth, Surbiton, Surrey, to whom all communications should be addressed.

Fresh Outbreak in East Sussex

At its meeting the Committee learnt that a fresh outbreak of myxomatosis had been confirmed amongst rabbits on two farms in the parishes of West Firle and Alciston, nr. Lewes. The farms lie at the foot of the South Downs and the area is heavily infested with rabbits.

The Committee agreed that control in this area would be more difficult than that in connection with the earlier outbreaks at Edenbridge and Robertsbridge; for instance, it would not be practicable to erect fencing. "However, in view of the fact that the long-term effects of the spread of myxomatosis are not fully known and pending full consideration of all available evidence, the Committee recommended that every effort should continue to be made to control present outbreaks of the disease. The Minister has accepted this recommendation and action is being taken in relation to the new outbreak in East Sussex."

The Committee agreed to keep the present position under continuous review and to hold a further meeting early this week.

* An extended abstract-translation of an article by Dr. G. Ramon, "Epizootic of Myxomatosis among Rabbits in France," is published as a General Article in this issue.—*Editor.*

CONTROL OF MANUFACTURE OF VETERINARY THERAPEUTIC SUBSTANCES

The Ministry of Agriculture and Fisheries reminds manufacturers and importers of veterinary therapeutic substances that the Diseases of Animals (Therapeutic Substances) Order, 1952, which comes into operation on January 1st, 1954, prohibits the manufacture for sale or the importation, except under licence, of sera and antitoxins, vaccines and antigens intended to be used solely for veterinary purposes.

Until the Order comes into operation, the Diseases of Animals (Importation of Therapeutic Substances) Order of 1936 will continue in force. Neither Order affects such import licensing arrangements as may be laid down at the time by the Board of Trade under the Import, Export and Customs Powers (Defence) Act, 1939.

Application for licences under the 1952 Order to manufacture for sale or to import any therapeutic substance subject to the Order should be made to the Secretary, Ministry of Agriculture and Fisheries, Animal Health Division, Hook Rise, Tolworth, Surbiton, Surrey.

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SWINE FEVER—REGISTERED VACCINATED HERDS SCHEME

Criticism by Shropshire Farmers

In its issue of October 23rd the *Whitchurch Herald* records that a resolution by Prees branch of the N.F.U. expressing dissatisfaction with the Registered Vaccinated Herds Scheme, which came before the meeting of the county executive at Shrewsbury on the previous Friday, was referred to the County Livestock Committee. The resolution said it was dissatisfied with the agreed scheme for the vaccination of pigs with crystal violet. In particular the apparent ban on the extended private use of the vaccine by producers was deplored. The branch also wished to register its protest against the high cost of the scheme, which would work out at approximately 5s. per animal. The report proceeds:—

"Debate on the resolution followed the presentation of the Livestock Committee report, which said that Mr. J. S. Bourne (London delegate) had confirmed that the scheme had been agreed between representatives of the Union and the British Veterinary Association in conjunction with the Minister of Agriculture, although it had still to receive Ministerial approval.

"Mr. H. N. Batkin (Prees) pointed out that Mr. Bourne, at their last meeting, had said that breeders who were at present using the vaccine would be allowed to continue.

"'We feel that under this scheme the vets. have gained a monopoly, because it is agreed that only those breeders should continue to vaccinate with crystal violet. We feel very dissatisfied that a breeder who wishes to do this will be barred; he's got to call in a vet. to do the work. It will be much cheaper for the breeder if he can do the job himself, and if it is possible we would like headquarters to reconsider the matter,' said Mr. Batkin.

"Mr. Bourne said the figures had been agreed between all parties and were awaiting the approval of the Minister. The scheme was pretty well accomplished. They could judge for themselves whether it was too late to take any steps. He felt it was. The turn-out fee for the vet. was 7s. 6d.—they could judge whether it was excessive—and there was the question of the flat rate of 2s. per pig, which was based upon the cost of the vaccine. The Ministry produced the vaccine and supplied it to the vets., and since they were the sole producers one could presume that the charge would be approved by the Ministry.

"Mr. G. A. Dawson, supporting Mr. Batkin, said these figures were only the charge for doing the actual job. He submitted that the cost was another 2s. 3d. per animal. 'I maintain we're getting a few too many of these things which come down for confirmation, and which are all agreed, and we seem to have had no chance of registering any protest,' he added.

"In reply to the Chairman (Mr. J. V. Dakin), who asked whether anything more could be done, Mr. Bourne said experiments were being conducted by which less vaccine could be used, and would reduce the cost.

"Mr. L. G. Fox said that if some farmers could do the job now there was no reason why others could not. This was a monopoly of the vet.

"Another member asked whether there was any inherent danger in the vaccine. 'My information is that the operator could give his mother-in-law a dose and he wouldn't hurt her,' he added amidst laughter.

"Mr. Bourne said this question of monopoly had been keenly contested and he wished he could remember some of the figures put forward by the other side. He knew that several vets. locally had contested the figures.

"The meeting agreed with Mr. Batkin's request that the matter be discussed by the County Livestock Committee."

"DISEASED MEAT"

In its issue of November 3rd, under the above heading, the *Manchester Guardian* published the following editorial article:—

Freedom to trade in diseased meat is not one of the freedoms that the Government should be anxious to restore. Yet the Ministry of Food is now permitting condemned carcases, which may be tuberculous or infected with other organisms directly dangerous to human beings, to be sold by auction to the highest bidder. Until recently such meat could be bought only by approved firms, and after processing by methods which would ensure the destruction of harmful organisms it was used for purposes which were extremely unlikely to contaminate human food. Now it can be bought by anyone prepared to pay for it. The Ministry of Food makes more money like this, and it appears also that free auctions for bad meat are regarded as part of the process of dismantling controls. It is true that condemned meat is stained with a green dye and that the law forbids those who buy it to sell it for human consumption. But regulations are not always obeyed, and there is quick money to be made out of putting meat that can be bought cheaply into the pies of dubious content that are sometimes inflicted on the public. The law is nominally a safeguard, but, as with many excellent laws, it may sometimes be extremely hard to see that it is effectively enforced. Moreover, it is apparently permissible for diseased meat to be sold as it is for feeding cats and dogs. In theory this may not endanger humans, but the same hands that cut the meat for a dog may prepare food for a family, and diseased meat may easily contaminate other food in a crowded shopping basket. It is also not unknown for the very poor to buy dog-meat for themselves; not everyone is aware of the significance of the green dye, and although such ignorance may be remiss food-poisoning—perhaps very serious poisoning—is a severe punishment for it.

Local authorities which have to administer many of the food laws, and know the difficulties of enforcement, are rightly becoming concerned about the Ministry of Food's faith in free trade for bad meat. It involves risks to which the community should in no circumstances be exposed. Ought there to be any trade at all in diseased carcases? When meat is condemned, ought it not to be burned without more ado? If the trade is so valuable that it cannot be abandoned, it is surely the Ministry's duty to observe the most stringent precautions against all possibility that diseased meat may reach the public in any form in which it can be used for human food, or contaminate other food. The money raised by free auctions may help to offset the subsidies, but there can be no real saving in anything that spreads the risk of disease. And even if it costs money to prevent disease it is money that the community ought to find. The Ministry of Food should take steps at once to impose effective controls on all bad meat reaching the market, and if it must be resold to the public for pet foods it should certainly not leave the Ministry's control until it has been efficiently sterilised.

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Auction of Condemned Meat

Meanwhile, the *Meat Trades Journal* reported that the Barnstaple Town Council, Devon, treating the matter as one of extreme urgency, decided on October 26th to send a telegram to the Ministry of Food concerning the sale of unprocessed condemned meat and offal.

"This was followed by a letter pointing out that, under the new arrangement, condemned meat from the local slaughterhouse, still controlled by the Ministry, was sold by open auction without securing a guarantee of adequate sterilisation.

"The letter went on to state: 'The Council's attention has also been drawn to public announcements where this meat is sold as prime quality, at lowest possible prices, ostensibly for pets. There seems to be no reason whatever why this meat should not be purchased for human consumption; and it is quite possible that it is, in many cases. They consider the Ministry of Food, as the owners of this meat, should take immediate steps to see it is sterilised, and should make such conditions as are necessary to secure that such meat is not used for human consumption.'"

. . . . .

Changes in Arrangements for Sale of Condemned Meat

In the House of Commons on Monday last, Major Lloyd George, Minister of Food, replying to Mrs. White, said that he had decided to make certain changes in the present arrangements for the sale of condemned meat from Government slaughterhouses. Local authorities were given the right of access to Government slaughterhouses and it was being made clear to them that notwithstanding Crown right their inspectors might take any meat unfit for human consumption and dispose of it as they thought fit. He

was also revising the present conditions of sale of condemned meat from Government slaughterhouses by requiring that before condemned meat was sold retail it should be sterilised.

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MEAT IMPORTS FROM FRANCE

Major Lloyd George, the Minister of Food, informed Mr. Janner in the House of Commons on Monday last that his department had been approached by the French Government about the possibility of their exporting meat to Britain and they were now awaiting details of the quantities and prices they could offer. Before imports could be arranged, the Government would have to be fully satisfied about the safeguards for the protection of public health and also of British herds. Those questions would be discussed next week by veterinary officers of the French and British departments concerned.

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ROWETT INSTITUTE FOUNDERS' DAY DINNER

Sir William Slater, Secretary of the Agricultural Research Council, proposing the toast of "The Founders" at the Founders' Day dinner of the Rowett Research Institute, Aberdeen, said the rôle of patron had now been taken over largely by the State. Science, at least, was now supported to a major extent by Government funds, and even the arts were more and more being made the clients of the State.

Under modern conditions, where wealth could not be so easily accumulated, the number of those who could endow research or art became fewer. At the same time the cost of scientific research became higher. There were now no bodies who could finance research other than the State and the great commercial organisations. The latter had to direct their major efforts to their own problems. Many generously supported fundamental research, but this could be only a sideline unless they wanted to court trouble with their stockholders.

Sir William said that among the great patrons of science they could count highly those who had so generously helped the Rowett Institute. They were gathered to honour their memory.

Lord Boyd-Orr, the former Director of the Institute, said it had been a great pleasure for him earlier in the day to walk through the institute and the Duthie Farm and to see what a flourishing institution it had become, the more so because in 1945, when he left it, it was "a shattered institution." During the war all research at the institute was washed out except that which within three years could increase food production.

The toast of "The Guests" was proposed by Lieut.-Colonel Charles Reid and replied to by Mr. J. N. Ritchie, Chief Veterinary Officer, Ministry of Agriculture. Lord Strathcona presided, and among the guests was Mr. James Stuart, Secretary of State for Scotland.

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ADDRESSES OF DISEASE-INFECTED PREMISES

ANTHRAX:

Ches.—Byley Hall Farm, Nr. Middlewich (Nov. 3).

Cumberland.—Dickinson Place, Allonby, Maryport (Nov. 3).

Norfolk.—Slaughterhouse, Hewitts Lane, Wymondham (Nov. 5).

Somerset.—Blackweir Field, Godney Road, Glastonbury (Nov. 3).

FOOT-AND-MOUTH DISEASE:

Glam.—Pwllygarth Farm, Kenfig Hill, Bridgend (Nov. 10).

FOWL PEST:

Beds.—Poultry Houses, New Street, Shefford (Nov. 11).

Suffolk.—Vincents Farm, Leavenheath, Colchester (Nov. 5).

Surrey.—Brendon Poultry Farm, South Park, South Godstone, Godstone (Nov. 4).

SWINE FEVER:

Beds.—Ekodene, Cleat Hill, Ravensden, Bedford (Nov. 4); Glenmore, New Road, Clifton, Shefford (Nov. 5).

Bucks.—Mont-au-Source, Loudwater, High Wycombe (Nov. 5).

Cambs.—Brook Street, Elsworth (Nov. 6).

Ches.—Norris Hill Farm, Heaton Norris, Stockport (Nov. 4).

Dorset.—Old Oak, Clayford Road, Ferndown (Nov. 6).

Essex.—The Shrubberies, Thornwood, Epping (Nov. 4).

Lancs.—Hyde Hall Farm, Denton (Nov. 6).

Lincs.—The Chestnuts, Main Road, Butterwick, Boston (Nov. 4); Scropwick Heath, Scropwick, Lincoln (Nov. 5).

Norfolk.—Orchard Farm, Tibbenham, Norwich; 3, Wards Chase, Stowbridge, Stowbardolph, King's Lynn (Nov. 5); Allotment Premises, Gas House Lane, Cromer, Norfolk (Nov. 6).

Suffolk.—Cucumber Lane Farm, Weston, Beccles; Lodge Farm, Sudbourne, Woodbridge (Nov. 4); Low Road, Frostenden, Beccles (Nov. 5).

Sussex.—Court Lodge Farm, Warbleton, Hailsham (Nov. 5).

EXPERIMENTS ON LIVING ANIMALS

The number of experiments on living animals in this country during 1952 was 2,117,912, it is reported in a White Paper published on Monday last. Those performed without anaesthetics was 1,836,328, approximately 86·6 per cent.

These experiments were mostly inoculations, modifications of the animal's diet or environment, or the administration of a drug or toxin, followed in each case by observation of the results which might follow. In many cases the results were negative, and the animal suffered no harmful effects. Cats, dogs, horses, asses, or mules were used in 14,989 experiments, and of these 7,099 were performed under anaesthesia throughout the whole period.

Over 1,900,000 experiments were carried out in the preparation and testing of substances intended for use in the treatment of disease in man or in animals.

The White Paper is published by the Stationery Office, price 4d.

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal opinions of the writer only and their publication does not imply endorsement by the B.V.A.

AN OUTSIZE CALF

Sir,—I wonder if the following case constitutes a record.

Subject.—Five-year-old British Friesian cow. Heavy in calf.

History.—Inseminated November 29th, 1952. First visited in September, when she was well and feeding, but dry and with no udder formation. The owner was worrying over delayed partufition. Four c.c. stilboestrol was given on two occasions with an interval of a week, without result. Decided to await developments.

Parturition commenced at 9 p.m. on October 30th, completing 11 months' gestation. Presentation posterior; delivery was by forced extraction, labour being delayed. The calf was delivered dead and weighed 140½ lb.—Yours faithfully, JOHN M. BUCHANAN, Casterbridge, 95, Damers Road, Dorchester, Dorset. *November 2nd*, 1953.

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MEAT INSPECTION SERVICES

Sir,—In reply to Mr. McPherson's letter in *The Veterinary Record* of October 24th, as one of the "white-coated officials," I must take him to task on some of his observations.

In this abattoir we had a kill last year of 29,804 animals, all examined by me personally with neither lay inspectors nor detention officers.

The Public Health Department in this town work as a team, ensuring, that the public get meat, whether home killed or imported, fit to eat, the shop and transport examination of same being the Sanitary Inspector's contribution to that effort.

Incidentally I question Mr. McPherson's statement that all meat inspectors are fully qualified Grade 2, or above, Sanitary Inspectors.

As Mr. McPherson mentions economic reasons I may add that I feel I, as a part-time official, give this local authority an expert, efficient, and economical service for a much lower salary than that of any Grade 1 Sanitary Inspector.

Finally, I agree that meat inspection is an exacting business, but surely Mr. McPherson, not an "arduous task." If Mr. McPherson cares to spend a week with me in this practice his views on long and arduous hours would be drastically altered. In any case, Mr. McPherson truly lives up to his Clan motto "Touch not the cat but a glove."—Yours faithfully, KENNETH J. MACKAY, "Stretton," Llanelly. *November 2nd*, 1953.

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CLASSICAL NOMENCLATURE

Sir,—Of recent years I have been disturbed to notice in our literature the increasing use of the terms EPIDEMIC and ENDEMIC in relation to animal diseases.

With deference I would remind you that these terms are derived from the Greek word "demos," meaning people (hence democracy, etc.), and should therefore be reserved for diseases of man.

Politicians and the general public may perhaps be excused if they use these words in the wrong context, but I submit that in our scientific articles, where we must conform to international custom in the use of a classical nomenclature, we should be careful to use the correct terms, *viz.*, EPIZOOTIC and ENZOOTIC, these being derived from the Greek word "zoon," meaning an animal, hence zodiac, zoology, etc.—Yours faithfully, R. C. U. FISHER, Charmwood, Farnborough, Kent. *October 30th*, 1953.